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Original Articles.

INFLUENZA AMONG CHILDREN AS SEEN IN A HOSPITAL WARD.

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[From the Children's Medical Service, Massachusetts General Hospital.]

INCIDENCE AMONG CHILDREN.

THE influenza epidemic of 1889-1890 affected children as well as adults, but because it spared the breast-fed babies, some of the earlier writers thought all children were immune. The most susceptible were the children of school age and adolescence. These facts are borne out by European statistics, of which the following is an example[1]: The percentage of children in 47,000 cases treated by physicians in Bavaria in 1889-1890, were as follows:

AGE	
One year	1.5%
Two to five years	5.4%
Six to ten years	6.6%
Eleven to fifteen years	7.2%
Over fifteen years	79.3%

The incidence of influenza among children in the present epidemic can be known only when complete medical returns are made to the boards of health. One factor which undoubtedly reduced the incidence among children in the present epidemic was the prompt closing of schools. The action of the authorities in so doing cannot be too highly commended.

The symptoms and course of the disease in older children were similar to those of the adult. The younger children tended to have less typical symptoms, and during infancy the picture was at times so atypical that the diagnosis would not have been suspected were it not known that other members of the family were sick with the disease. Fortunately, with the exception of the new-born, and premature infant, the nursing infant rarely, if ever, contracts the disease.

The three types of disease spoken of in the earlier epidemics are the catarrhal, gastro-intestinal, and nervous types. As will be seen later, nearly all the cases in the present series fall into the catarrhal or pulmonary type, while only in rare instances are there gastro-intestinal complications, and in no instance symptoms referable to the central nervous system which could not be explained by fever. The gastro-intestinal symptoms appear to be more common in infancy than during childhood. This would agree with the experiences of the earlier epidemic.

The thirty-one cases in this series were studied in the Children's Ward of the Massachusetts

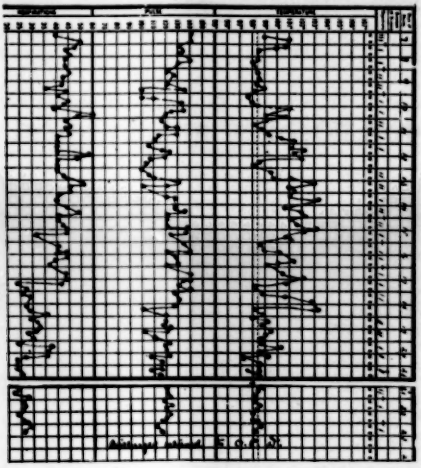

Chart 1.

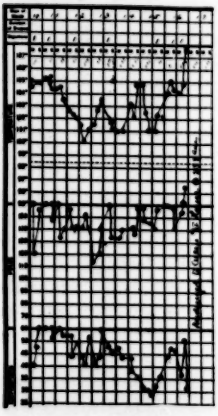

Chart 2.

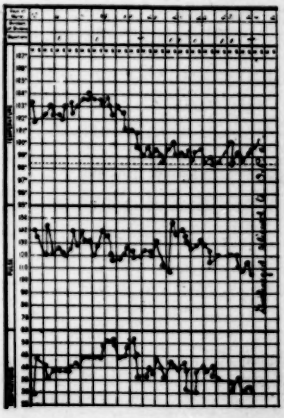

Chart 3.

General Hospital. The first case entered September 12th, five days after the entrance of adults to this and other hospitals. Ten of our cases were under two years of age, and none were breast-fed except an infant eleven days old. Ten were in the second and third year, and the rest ranged up to twelve years. The greatest number of admissions for any one day was four on October 7th. The majority of these cases, we found, had been sick from four days to one week before their admission to the Hospital, and, with a few exceptions, represented the severest form of the disease. This report, therefore, cannot be said to represent the epidemic as a whole, but merely the sickest type of hospital case.

In many instances the disease commenced with sneezing and profuse watery discharge from the nose. The infection then spread down the respiratory tract, and coughing became a constant and distressing symptom, being present in all cases. Contrary to the experience in

adults, there was no clinical evidence of sinus infection among the children, and otitis media was present only in four cases. There was only slight temporary reddening of the ear drum, which subsided in twenty-four to forty-eight hours without the formation of pus, in the remaining cases. In one instance the infection of the middle ear extended to the mastoid, but quieted down before operative interference was necessary. The incidence of sore throats was also less prevalent among the children than adults, and on inspection, the throat showed surprisingly little evidence of inflammation, being rarely more than slightly reddened. This may be due to the fact that the cases were not seen in the first days of the disease. There was definite enlargement of the glands of the neck in only two cases; in neither was operative interference necessary. The complaint of headache was markedly less in children, being present in only one-sixth of the cases. Fever was present in all cases, and at times was as high as 106F, (see chart). The height of the fever, however, did not necessarily give evidence of the severity of the disease. During the first weeks of the epidemic it was noticeable that children who were cyanotic early in the disease, in nearly all cases died. When cyanosis was absent the prognosis was usually favorable.

On physical examination there was a surprising uniformity of findings. The heart in all instances was normal to percussion and auscultation, except shortly before death. The liver and spleen were not enlarged in any instance, as a result of the disease. Conjunctivitis was present in a few instances during the catarrhal stage of the disease, but was not seen after four days, at which time it was not sufficiently pronounced or frequent enough to remind one of the prodromal symptoms of measles.

Involvement of the lung was present in all the cases studied, except one twelve year old girl, the remainder of the cases showing definite consolidation by auscultation and percussion and by x-ray. In one instance the writer was unable to determine any evidence whatsoever of consolidation after careful examination, but the x-ray showed a definite solid area in the left upper lobe. Even after comparing the x-ray findings with the child, it was impossible to demonstrate any clinical evidence of consolidation. This is not an isolated experience, but apparently was characteristic of the epidemic. Furthermore, all sick cases of influenza seen in the hospital showed other patches of consolidation than those that could be demonstrated clinically. It is our belief, therefore, that all severe cases in this epidemic were complicated with broncho-pneumonia whether clinical signs were present or not. The clinical signs are often those of a diffuse or capillary bronchitis, without consolidation. The x-ray in these instances showed a diffuse mottling of the lung. In twelve cases the left lower lobe was the first to become involved, this usually extending to other parts of the same side of the chest or to the right side; in eight cases, both bases showed signs of consolidation when the patient was first seen. It may be said, roughly, that the greater the extent of the solidification, the less likely was the patient to recover. There was rarely lobar pneumonia. Pathologically, there was always a broncho-pneumonia. In two of the cases, which came to necropsy, there was no evidence of emphysema of the lungs. Two cases of this series had empyaema; one was operated on successfully, and the other died.

The kidneys showed little or no evidence of trouble other than what might be expected with any severe infection. In six cases the urinary sediment showed a few leucocytes, but not enough to be considered of pathological importance, and in one they were in sufficient numbers to warrant the diagnosis of pyelitis. Two cases showed only microscopic blood, and twice there was a large trace of albumen. Considering the severity of the disease, the kidneys showed surprisingly little evidence of disease.

The examination of the blood confirms the findings of earlier observers. The white count, irrespective of prognosis, and complications, was low, in the majority of cases. It was 10,000 or under in five cases; between 10,000 and 15,000 in thirteen cases, and above 15,000 in five instances, the highest being 34,000. The differential count from the blood smear showed a polynuclear leucocytosis in all cases but one, an infant of five months which had only 40% polynuclear cells.

In a few instances, shortly before death, the deep sighing respiration made it seem probable that acidosis was present, but the carbon-dioxide tension of the alveolar air could not be determined because of the serious condition of the patient. Acetone was present in the urine in two cases. Usually during other acute respira-

tory infections in the winter, acetone is present in 90% of the cases.

PROGNOSIS.

In considering the prognosis, it must be remembered that only the sickest cases came to the hospital. The prognosis in mild, uncomplicated cases was favorable. Thirteen, or 42% of the cases in this series died. This was not far from the figures observed in adults in many hospitals. When cyanosis was present the prognosis was unfavorable, especially if present in the early stages of the disease. It is probable from the experience in this and previous epidemics that breast-fed infants do not often contract the disease.

AFTER-RESULTS.

An additional series of twenty-seven cases, which had been treated at home were brought to the Out-Patient Department for examination one to three weeks after they had recovered from the disease. They were examined with special reference to complications and after-results. Seventeen were perfectly well, one of them was well known to the clinic, being under treatment for acute endocarditis. So far as could be determined no damage had been done to the heart after recovering from one week's illness in bed. One child developed a systolic murmur without any evidence of endocarditis and in a third a quiescent endocarditis flared up during the disease. In four cases a cough persisted for three weeks without any physical signs. This apparently is characteristic of the experience in adults. There was evidence of trouble in the naso-pharynx and the adjacent organs following the influenza infection except in five children (tonsils 1, adenoids 1, otitis media 2, mastoid, which had been drained, 1). Up to date it has not been found that tuberculosis was the after-result of this disease, but it will be necessary to study a much larger group of children over a longer period of time, to determine this point. It has been said that influenza holds a place with measles and pertussis in predisposing a child to tuberculosis. The immediate after-results of influenza in this epidemic were similar to those of any acute respiratory infection and were not characteristic.

TREATMENT.

The treatment of the disease is symptomatic. Careful and individual nursing is the most important single element of treatment. Crowding should be avoided. Better results are obtained in the home with individual nursing, than in a hospital, no matter how good, where there is unavoidable crowding, and one nurse has to care for several patients. There should be plenty of fresh air. The children that were out on the covered porch of the hospital seemed to do better than those indoors. They should be given as much food as the digestion can stand, and plenty of liquid. This, however, will not be done, unless a liquid chart is kept. The minimum amount of liquid to be given is the amount which the child takes during health. With this fixed minimum, 50% more should be added, and the physician should insist that the child receive it as long as the stomach does not rebel. The liquid dilutes and carries away the toxines through the kidneys. During high fever much more food is being burnt up than in health, and since the first food component to be burned up is carbohydrate, plenty of carbohydrate should be given in the food to replace that which is burnt up in the body. If this is done there will always be enough sugar in the blood to prevent the formation of acetone bodies and acidosis. If sufficient liquid is given there will probably be no abdominal distention. Distention should be treated with carthartics, enemas and stupes. Stimulation may be given when indicated, but in my experience, it does not modify the eventual outcome. Normal salt solution given subcutaneously when the body is obviously not receiving enough fluid, however, often acts as a powerful stimulant, and is an exception to this rule. It may be given intravenously in older children, and into the lateral sinus in young infants. When either of these procedures is necessary, 5% pure glucose may be added to the normal salt solution, with excellent results. The glucose probably acts only as a food and not as a stimulant. Theoretically it is of the most value when the child has taken none or insufficient food for twenty-four to forty-eight hours.

REFERENCE.

[1] Pfaundler and Schlossmann: Dis. Children, English Edition, 451.

INFLUENZA AMONG CHILDREN AS SEEN IN PRIVATE PRACTICE.

By Arthur A. Howard, M.D., Boston.

In the influenza epidemic prevalent in Boston during September, October, and November, 1918, the clinical picture presented by the children seen in private practice differed materially and gave a far different impression from that obtained in the isolation wards at the hospital. Influenza infection among children seen at the hospital appeared much like the adult type of the disease and developed a high mortality. Children seen in private practice were, in general, much less ill, did not resemble as closely the adult type and the mortality rate was much more favorable.

It is the object of this paper based on the study of 70 consecutive cases to present the typical clinical picture and some of the chief features that characterized the average private case. The story and uniform picture presented, that varied only in degree, was as follows: The child was taken suddenly ill with a high fever—usually with initial headache and vomiting, moderate prostration and a hacking irritating cough. The first impression gained on looking at the child was that it seemed less ill than the temperature indicated. The distinctive clinical features were: The cheeks flushed a deeper more cyanotic red than the usual fever flush; there was also a greater or less degeree of cyanosis of lips and skin. The eyes appeared more red and irritated than with an ordinary cold or fever; the injection of the vessels of the cornea, simulating that seen in measles. The child was dull but restless, from simply tossing about to active delirium. The breathing was only moderately rapid and not labored even when considerable pneumonia was present. The temperature was usually high, most often 104 to 105, even in cases with but scanty physical findings. The throat was injected a dull red color but, as a rule, did not look as severe a sore throat as the temperature indicated. The mucous membranes of the throat were unusually clean as regards exudate or patches even in cases where the membranes were so engorged that coughing caused bleeding. The cervical glands were usually moderately enlarged. The dry hacking cough was a very noticeable feature of cases both with and without pneumonia complications. Acetone odor to the breath was noticeable in a high percentage of cases. The acetonuria did not, however, seem severe and added but slightly to the child's dullness and prostration. Other findings were conspicuous by their absence.

This description briefly indicates the picture presented in a great majority of cases. The unusual case, the child dangerously ill, had a pasty pale appearance even when the temperature was high. Or occasionally had a flushed appearance but the flush was a markedly deep red from cyanosis and the child was very dull, stuporous or delirious.

INSPECTION SINGULARLY EFFECTIVE AND CORRECT IN SIZING UP PHYSICAL CONDITION AND PROGNOSIS.

After seeing a few of these cases, one could not help but be impressed by the value and accuracy of his inspection in contrast to the results obtained from a careful physical examination. If, on inspection, the child did not appear ill, although the temperature might be 105 or more, physical examination not only failed to reveal any complicating pneumonia but almost invariably the child did not develop pneumonia later and would be much improved, with a marked drop in temperature, even to normal, in twenty-four to forty-eight hours; or, if pneumonia was present, but few patches appeared and quickly resolved. If, on the other hand the child looked ill, regardless of whether the temperature was 102 or 105, the child would invariably prove to have pneumonia or develop signs of pneumonia in a few hours. The practical importance of the inspection in both instances lay in the fact that it was more reliable than the results of careful physical examination and, if heeded, safeguarded errors in diagnosis and prognosis that would have occurred had only the results of auscultation and percussion been considered.

COMMON CLINICAL FEATURES.

1. *Symptoms.*

a. Headache was complained of even by the younger children. This seemed to be an almost constant source of real discomfort in every case old enough to express this symptom.

b. The eyes also, apparently, ached and caused considerable discomfort not only among those old enough to describe their feelings but also among the young children, as judged from their actions.

c. Cough was a most constant and irritating symptom in the majority of cases. It was of a dry, hacking character simulating a measles cough. The cough did not suggest pertussis except in cases having pertussis or having recently recovered from whooping cough.

d. Nosebleed and bleeding from the throat frequently occurred. The bleeding from the throat was limited to small amounts of bright blood expectorated on coughing or, in some cases where the membranes of the throat were engorged, forcible depressing of the tongue and the resulting spasmodic gagging caused slight bleeding. The nosebleeds, although fairly common occurrences in these cases of marked injection of the mucous membranes, were not usually severe and required no treatment.

e. Not a single child complained of earache. Only two cases, both of which were among those too young or too ill to mention earache, developed any ear complications. In both of these cases, it was a simple otitis media. There were no cases of mastoid or sinus involvement. Absence of middle ear complications was especially striking in view of the marked involvement by the infection of the upper respiratory tract.

f. Digestive disturbance though often present was not as a rule, severe. Vomiting was usually limited to once or twice. Where the vomiting was more persistent, treatment of the acidosis eliminated this trouble. Intestinal indigestion was more frequently met with in the younger children than in those who were older. As a rule this disturbance was no greater than would be expected with the temperature, and in no case, proved a very troublesome feature.

Pain in children old enough to localize their trouble was occasionally complained of in the muscles of the legs and arms. It was not, however, apparently, as severe as in adults. Delirium was present in the first 24 hours in a majority of cases averagely ill. This feature did not last as long and was not as severe or troublesome in children as in adults; this was especially true in young children. In very few cases was the delirium active enough to require sedatives or any treatment other than cool sponges.

A summary of the symptoms in the order of the frequency of occurrence follows:

TABLE I.

(Number of cases, 70.)

SYMPTOMS	PRESENT
Cough	70
Headache (34 too young to state; 2 no ache)	34
Acetone breath	55
Vomiting	41
Nosebleed	17
Diarrhea	14
Earache	2?

2. *Physical Findings.*

Cyanosis of the type described in the typical clinical picture was almost universally present to a greater or less degree.

Eyes showed injection of the mucous membranes of the lids and of the vessels of the cornea.

Throat in the majority of cases showed only slight redness and practically never any exudate or patches. Such cases having a higher temperature than would be expected from the appearance of the throat. In the more severe cases the mucous membranes of the nose and throat were markedly injected and were of a dark cyanotic appearance. Such cases often showed sufficient engorgement to cause bleeding on very slight provocation.

The Cervical Glands were moderately enlarged in nearly every case. Even in the severe cases of this series, however, there was not a single instance in which the glands became reddened or broke down.

Ears. Only two cases developed any ear complications. They were both simple otitis media and were very mild in character.

Mastoid and Sinuses. No evidence of mastoid or sinus involvement was found in any case.

Heart. There were no cases of pericarditis, endocarditis or valvular involvement. In cases in which pneumonia was severe and the child was markedly prostrated and toxic, there were evidences of dilatation of the heart but even these failed to display the typical signs of myocarditis.

Abdomen. The liver and spleen did not show any distinctive features. No cases developed peritonitis or abdominal complications. Distention was present in many cases, troublesome in a few, but was a no more marked feature than might be expected with the high fever and resulting digestive disturbance.

Kidneys. The examination of the urine was not carried out as a routine. In the cases examined, the findings were only such as might be expected on account of the fever and upset metabolism. No cases developed definite nephritis or pyelitis.

Central Nervous System. Although many cases were delirious and there was a suggestion of encephalitic irritation in a few, no cases developed an active encephalitis and there were no meningitis complications.

Lungs. Nearly every case that was at all severe in character showed either a marked bronchitis or a pneumonia. Bronchitis, more or less marked was present in all 45 cases not showing pneumonia; 25 of the 70 cases developed pneumonia. The type of the pneumonia was universally broncho-pneumonia.

The location of the lesions seemed to be nearly uniformly distributed between the two lungs with greater involvement of the middle and lower lobes. The pneumonias were characterized in general by scanty physical signs. The patches were usually small; individual areas, as a rule, cleared quickly. In cases where the disease was prolonged, this was due to continued development of new areas of consolidation. Most cases in which the physical findings justified a diagnosis of fairly extensive bronchitis, but did not justify a diagnosis of pneumonia, subsequently proved to be pneumonia. Usually such cases had only small patches of consolidation but few subsequent areas developed and the duration of the disease was short.

COMPLICATIONS.

The only common complication of the influenza infection, if so constant a physical finding can be called a complication and not a part of the disease, was the bronchitis and broncho-pneumonia. Acetonuria was the only other frequent complication and that, as already described, was usually mild in character.

The pneumonia was singularly free from complications. Of the 70 cases considered, there was not a single case of empyema and only one of unresolved pneumonia. This case, after one and a half months is now clearing up.

As might be expected, children having pertussis or being debilitated as the result of whooping cough ran a more difficult course than other children. The temperature might not run any higher but the children seemed more prone to develop repeated patches of broncho-pneumonia which resolved more slowly and prolonged the duration of the disease.

PROGNOSIS.

MORTALITY (PRIVATE PRACTICE.)

No. of Cases	No. of Deaths
70	1

In general the children seen in private practice were less ill as regards life than their temperature indicated. The broncho-pneumonia, having rapidly clearing areas and clearing up rather rapidly, ran a less protracted course and produced less loss of weight and caused less general debility than would be the case in the average broncho-pneumonia. For the same reasons, the mortality was favorable over ordinary broncho-pneumonia. In the severe and fatal cases, the clinical picture simulated the adult type of the disease much more closely, regardless of the age of the child. The fatal cases being pale rather than flushed even when the temperature was high. There was more cyanosis, so that the child had a pasty blue appearance, or if flushed, the flush was extremely dark red in color and the child was markedly prostrated.

Although some cases seemed more susceptible and less resistent from the start than others, in general, fatal results seemed more influenced by failure to get early or proper treatment. Cases which had been kept in rooms with windows closed and no attempt to keep bowels well open, were the ones seen with pale pasty appearance and fatal outcome. Such cases responded poorly to fresh air, purging, and all treatment, when such treatment was started at a late stage of the disease. This may well largely account for the different appearance and poor response to treatment in cases seen at hospitals and in consultation. My own consultation figures as contrasted with the results in private cases are suggestive in this connection, being as follows: Number of consultation cases 21; deaths 5. Number of private practice cases 70; deaths 1.

That the susceptibility, the duration of temperature, and the number of cases developing pneumonia was in inverse proportion to the age was the impression gained while in the midst of the work, before assembling the figures. The following tables seem to bear this out:

TABLE II. AGE *versus* SUSCEPTIBILITY.

Total cases, 70

AGE	NUMBER
Under one year	11
One to two years	12
Two to five years	23
Five years and over	24

The relatively fewer cases under one year and from one to two years is the more significant in view of the fact that from 75 to 80 per cent. of my usual practice is among children under two years of age.

TABLE III. AGE *versus* DURATION OF TEMPERATURE.

AGE	AV. DURATION OF TEMP.
Under one year	2.9 days
One to two years	3.9 days
Two to five years	3.3 days
Five years and over	4.9 days

TABLE IV. AGE *versus* PNEUMONIA.

AGE	NO. CASES	PNEUMONIA
Under one year	11	2
One to two years	12	4
Two to five years	23	4
Five years and over	24	15

TREATMENT.

The most essential and effective measures were:

1. *Elimination of Toxins.*

a. Fresh air—with or without pneumonia.

b. Free catharsis—two or three stools a day.

c. Pushing fluids—water, milk, gruel, orange juice.

2. *Early treatment of the throat and nasopharynx.*

a. Potassium chlorate in large doses seemed unusually effective and prompt in quieting inflamed mucous membranes of the throat—definite results in 12 to 24 hours—large doses given.

Child of four or five seen in late afternoon given 20 to 25 grains in following 12 hours. Not particularly effective or necessary after using for two consecutive days. Discontinued after second day. Aspirin not as effective. Throat did not quiet as quickly. Temperature kept up for longer period—even with no pneumonia or other complications.

b. Gargle when old enough—not used much.

c. Argyrol (15%) to nose.

3. *Pushing Food.* After first 12 hours, when water only was urged. Milk, cereal, bread and broth given freely regardless of temperature. Small amounts at three to four hour intervals rather than large amounts at longer intervals.

4. *Reducing Temperature.* Depressants did not work well—seemed contra indicated. Cool sponges and cold air most effective in reducing temperature and in quieting restlessness and delirium.

5. *Quieting patient.* Sponge all that was usually used.

In extreme restlessness and in delirium used paregoric.

6. *Stimulants.* Not used—except in more severe cases—then used symptomatically.

Caffein seemed more helpful than strychine and was used frequently during first few days of illness in all cases more than moderately ill. Cases indicating stimulation most definitely were cases which responded poorly to all measures of treatment.

7. *Acidosis (acetone breath).* Soda Bicarb. was given in five to ten grain doses in teaspoon-amounts of water at two hour intervals until vomiting or marked acidosis symptoms disappeared.

8. Vaccines were not used extensively enough to warrant drawing conclusions as to their effectiveness either as treatment or prophylactically.

9. *Glucose solution* 5% in physiologically salt solution was used intravenously as a last resort measure in two cases. In one the results were very striking. The child, which was apparently dying, showed a tremendous reaction. The temperature, which was 104, rose to 108.2 in one hour, followed by a rapid drop to 97 in three hours. The child did not develop any new areas of consolidation and had an uneventful convalescence. In the other case life was apparently prolonged for forty-eight hours but with no marked reaction either in temperature or in favorable effect on the disease.

SUMMARY AND CONCLUSION.

1. The children infected with influenza were much less ill than adults.

2. The clinical picture of children seen in private practice differed from that of children in the hospitals in that the symptoms and physical findings in total were on the average, much less severe and the mortality lower.

3. Children ill with influenza infection presented a fairly definite and uniform picture. One of the chief characteristics of the disease was the frequency of a complicating bronchitis or broncho-pneumonia.

4. The most consistent symptoms were cough, headaches, and a mild acidosis.

5. The most consistent physical findings were high temperature, injected eyes, inflamed mucous membranes of the upper respiratory tract; bronchitis and broncho-pneumonia.

6. Children were susceptible to the infection in inverse proportion to their age. This fact seems borne out by the statistics in this series. Also, it was noticeable in the home that the order of developing the infection was parents (young adults), older children, younger children, and last the baby, even when the baby was nursed by an infected mother.

7. Inspection was particularly valuable over other methods of physical examination in determining diagnosis and prognosis.

8. Children having pertussis or but recently recovered seemed especially vulnerable, ran a severe course, were much longer ill and made a slower convalescence.

9. The most effective treatment consisted of fresh cold air, free catharsis, early treatment of throat, forced fluids, and supportive treatment in pushing soft solid foods.

10. Aside from the pneumonia and bronchitis the children were singularly free from complications.

11. The prognosis in these cases as to the severity and duration of the disease could be unusually correctly foretold at the first visit by inspection and general physical examination. The cases having broncho-pneumonia ran a more favorable course than would usually be the case in a similar number of average broncho-pneumonias. The mortality among the children when early treatment was obtained was not at all unfavorable.

12. The convalescence in the cases averagely ill was marked by a rapid recovery up to the point of being able to sit up and walk about the room; then a rather slow regaining of strength, the color and general appearance being usually better immediately after recovering than in the subsequent few days. After this period of slow recovery was passed the child returned to normal condition very satisfactorily.

13. One very definite clinical impression received was that the children developing influenza infection during the first days of the epidemic and while the spread of the disease was on the increase were much more acutely and suddenly ill than those developing the disease at the height or during the wane of the epidemic.

EPIDEMIC MENINGITIS SITUATION AT CAMP MacARTHUR: HOW DEALT WITH.*

By Leon S. Medalia, M.D., Boston,

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INTRODUCTION.

The winter of 1917-18 has been the first which has seen large numbers of men from various parts of the country congregated in the military camps. The epidemic diseases encountered in such camps, the methods used in overcoming them, especially when such methods were successful, are worth recording. This, I feel, is the case with epidemic meningitis at Camp MacArthur. This article is a description of the meningitis situation at this camp, methods of procedure in dealing with detection of carriers, and outcome. The word "situation" is used rather than "epidemic," because at no time has the disease assumed an epidemic form; at no time did we have a second case in any company or squadron, after once cultured and the carriers isolated; nor did we have any case develop amongst those that were detected as carriers. How much this is due to the methods used and how much was coincidence, no one, of course, would venture to say, but the fact was certainly a happy one

I. DETECTION OF CARRIERS.

The most important prophylactic measure in this disease, as is well known, is the detection, isolation and treatment of the meningitis carriers. Upon this single measure, if successfully carried out, will depend the possibility of nipping in the bud the ravages wrought by this disease, if at all allowed to become epidemic in form. All the conditions necessary for this disease to become epidemic and spread rapidly are not wanting in military camps, especially during the winter months. It is for that reason that prompt action must be followed out to detect the possible carriers in order to break the chain of the vicious circle established by the occurrence of a case of meningitis in a military camp. The probability that the disease develops from meningococci, appearing first in the naso-pharyngeal mucous membrane would, if detected before the disease established itself, save the development of many cases of actual meningitis.

* Read before the Medical Officers of Camp MacArthur, at a stated meeting, June 17, 1918.

This is another good reason for the prompt detection of carriers.

Method. Upon the occurrence of a case of meningitis, that is, as soon as the diagnosis was made, the whole company or squadron, consisting of about 200 individuals, was at once placed under quarantine, cultured, and the possible carriers isolated and treated.

The culture medium in use in the beginning was serum water glucose agar. Later 5% human blood in glucose agar. The petri plates were divided in two, at most, three, parts with a glass pencil. The "west tube" was found cumbersome. The straight wooden nasal swab was found most expedient and gave good results. It does away with the necessity of tongue depressors and the possibility of saliva admixture while withdrawing the swab.

A roster of the company or squadron was prepared in duplicate. The whole company was lined up according to roster and two swabbers set to work, one taking the company from 1 to 100, the other from 101 to the last, each having a clerk read off the name and number, the latter to correspond to the number on the plate. When swabbed the men were seated facing the light; the swab was passed through the anterior nares along the floor of the nose until the posterior wall was reached. The swab was then rotated, touching posterior pharyngeal wall and eustachian eminences, withdrawn carefully, inserted in the second nostril and the same procedure carried out. The mucus was then planted on the part of the plate to correspond with the number of the man; three streaks were made with the tip of the swab, radiating from the place where the mucus was first deposited. As a rule, there was not much mucus to interfere with the obtaining of individual well disseminated colonies. The plates were placed in closed buckets, kept warm by means of hot water bottles, while in transit to and from the laboratory. Upon reaching the laboratory they were immediately placed in the incubator.

Identification of the Organism. The method described by Flexner[1] was closely followed. The plates were incubated over night at 37°; at 10 A.M the next day they were removed and kept at room temperature and examined at 1 P.M. The suspicious looking colonies were smeared on slides and stained by Gram's method; and if found gram-negative were subcultured on slanted blood agar tubes or serum water glucose agar slants for further study and agglutination. Those persons whose culture showed gram-negative diplococci and colonies typical of meningococcus were considered probable carriers and at once isolated from the rest of the company, and spraying with dichloramin-T instituted.

Early in this week it was noted that if the plates that showed the gram-negative diplococci were left at room temperature over night and reëxamined the next day a number of them developed pigment, or became opaque and large, showing definite characteristics of micrococcus catarrhalis, flavus or other indefinite gram-negative organisms, which grow at room temperature. Thus keeping the plates for another 24 hours at room temperature has saved considerable time in attempts at agglutination.

The rule was that if the culture showed colonies that were fairly transparent, with edges that would blend with the culture medium, somewhat larger than pneumococcus, consisting of gram-negative diplococci, and not changing when kept at room temperature over night, the person from whom the culture came was considered a probable carrier and treated as such. Subcultures were made and agglutination proceeded with; if negative, the supposed carrier was at once released. But if the subculture failed and agglutination was not possible, he was kept until found free of gram-negative diplococci upon subsequent cultures.

Colony and staining characteristics, as well as morphology, were found to be the most important reliance. While isolation for agglutination was attempted in every case, it must be admitted that it was successful only in a small proportion of the cases. The chief difficulty was in obtaining a growth on the subcultures for the agglutination. Fermentation reaction has been resorted to as a last measure in some cases. The results certainly proved the advisability of our procedure. The fermentation reaction is worth resorting to and is very simple. The meningococcus, as is well known, ferments maltose and glucose, but not saccharose. The catarrhalis does not ferment glucose; and other gram-negative organisms ferment saccharose. (Dextrose, maltose and saccharose bouillon put up in Durham's fermentation tubes, to which is added azolitmin solution as an indicator, also the addition of serum water in proportion of 1-5, is to be recommended for the purpose.)

Culture Media. As already stated, the cul-

[1] Jour. Am. Med. Assn., Sept. 1, 1917.

ture medium used in the beginning was 2% agar from beef infusion broth, 1% Dextrose, to which has been added serum water in proportion of 1 to 5. (Human serum was obtained in a sterile way and mixed 1 part to sterile water 3 parts), reaction, 0.4 to phenolthalein; this gave a perfectly clear transparent medium and grew the meningococcus readily. Later, however, this was replaced by 5% human blood added to the same glucose agar, which is being used to date.

The glucose agar is kept in 1,000 c.c. flasks in amounts of 500 c.c. in each flask; eight such flasks are kept on hand in the refrigerator. When necessity arises, four of these flasks are melted, the temperature brought down to 45° C. 25 c.c. of blood is obtained from the arm vein in a sterile way and immediately added to the 500 c.c of melted agar and at once plated out. If the work is done in a room with closed windows and the plates protected from dust at the time of plating, the chance of contamination is reduced to a minimum.* From 35 to 40 plates are obtained from each of the 500 c.c. of blood, making 140 or more plates from the four flasks, each divided by two, giving more than enough for the culturing of a whole company. All this can be done within two hours, and the culturing of a whole company as outlined above takes from 1½ to 2 hours. The other four flasks are used to reculture the whole company on the third day, while more media are made up and a third culture is taken again on the third day.

The advantage of this procedure is obvious. Thus within four hours of the appearance of a case of meningitis we had the whole of the company under quarantine and cultured. The second and third culture, I believe, is necessary. Our findings have demonstrated the advisability of this procedure; the chance of error is minimized and the skipping or overlooking an active carrier for various reasons is thus done away with. The use of fresh blood instead of defibrinated or laked blood or the serum water agar is to be recommended, especially where one is working with an enlisted personnel who are not trained technicians, the less one has to handle a culture medium that cannot be autoclaved before use, the better off one is.

* A long piece of beaver board or an ordinary board 18 cm. wide, is set up on two test tube racks on the laboratory bench, the whole covered on all sides with a cotton sheet. The petri plates are set up under the board and are thus completely enclosed from all sides. The sheet is raised slightly in front while the medium is being plated. Endo plates have been prepared in this way in large numbers and with very little contamination.

The straight blood agar plates have also served another purpose, and that was the detection of hemolytic streptococcus. This, I feel, is as important as the detection of meningococcus carriers because of the streptococcus broncho-pneumonia, against which we have practically no remedy other than the prevention.

NUMBER CULTURED AND PERCENTAGE OF CARRIERS FOUND.

This report is based upon a study of 6,926 cultures, on a total number of 2,568 individuals. Out of this number there were 56 positive carriers and 2,513 negatives. This gives a percentage of 2.25% positive carriers. This low percentage of positive carriers may be accounted for partly by the fact that most of these individuals were really not "close contacts." The intimate association between men living in tents, most of the time in the open, where the weather is fairly good, is not marked. The wards that were cultured where the patient was from a few hours to a few days keeping to his bed should also be considered not "close contacts." The most important factor, however, in the low percentage of carriers is the good weather conditions. From tables in my possession of weather conditions of January and February (U. S. Department of Agriculture, Weather Bureau, Office of Coöperative Observer) I find there were three rainy days in January (January 11, three inches of snow; 14th and 22nd, ½ inch of snow) and one rainy day in February (February 17th). The temperature was also not very low. There were only three days in January in which the mean temperature ran below 30 degrees, and only one day in February.

Table I. gives a detailed account of the organizations cultured, number and percentage of carriers found and the total number of individuals cultured. Reference to that table will give one at a glance a clear idea of this part of the work.

The consideration of some of the groups individually is here given in order to bring out some points that cannot be brought out in the table:

GROUP 1. The reason for culturing the first organization, on December 17, 1917, for meningococcus carriers, was because a member of that organization when on a furlough was reported by wire to have died of epidemic meningitis at Cook County Hospital, Chicago. He left on

Wednesday feeling well and died on Saturday soon after his arrival in Chicago. His company was at once placed under quarantine and cultured. Out of 221 men only one positive carrier was isolated. This company was cultred three times,—December 17, 20 and 24, 1917. No other case developed in this company. It was felt at the time, that the case which died had contracted the infection on the train or just before leaving, rather than having contracted the infection while in camp. Certainly the finding of only one carrier and no other case developing while that case died within 72 hours is very suggestive. Thus, in this company of 221 men, probably not "close contacts," only one carrier, or 0.45%, was found.

GROUP 2. The second group was cultured for the first time on January 17, 1918, consisting of 199 men, in which a case of meningitis occurred,—the first case of meningitis in camp This company yielded five carriers; one on the first culture, three on the second, and one on the third. One streptococcus hemolyticus carrier was also detected.

Thus, this group of "moderately close contacts" yielded 2.5% positives. The necessity of culturing three times instead of once is fairly well illustrated in this company, where three positives were detected on the second culture and one on the third. Other similar findings have occurred and will be referred to later.

GROUP 9. This group was that of a squadron 198 strong. All were cultured three times (January 29, February 5 and 9, 1918), and all were found negative. The case of meningitis from this group, fairly fulminating, was admitted on January 28 and died on February 3, 1918. The question of positive carrier findings being in inverse relation to the severity of the case is suggested by this group and by group 3.

GROUP 10. This group consisted of a squadron 191 strong. The first culture yielded seven positives (February 3, 1918); the second (February 5, 1918), one positive; and the third, two positive carriers; thus making a percentage of 5.3—the highest percentage of positive carriers in all the groups.

This relatively high percentage, I believe, may be explained by the fact that one case from this squadron was admitted to the hospital on January 21, 1918, with indefinite symptoms until February 2, a lumbar puncture was done and the diagnosis of meningitis established. Meanwhile, on January 29, 1918, another case of meningitis developed in the same squadron (before the first case was diagnosed), at which time the squadron was at once quarantined and carriers isolated. No second case appeared after that. This incident strongly suggests the value of early diagnosis by lumbar puncture.

GROUP 11. This group is a squadron of 191 strong, cultured for the first time February 7, 1918, when two positives were found; the second time (February 10, 1918), four positives were detected; and the third time (February 13, 1918), there were two positives. The meningitis case of this group was brought to the base hospital in a comatous condition; 30 c.c. of spinal fluid was withdrawn and serum administered. He made an uneventful recovery. This group and the preceding one, as well as group 13, to follow, show the necessity of three successive cultures in each group. The percentage of positive carriers in this group is 4.2.

GROUP 18. This is a squadron, 153 strong, in which a case of meningitis occurred and was cultured for the first time May 18, 1918. At that time only the tent-mates, five in number, were cultured, with negative findings. These five men were cultured for the second time on May 20, 1918, and were again found negative. On the same day the rest of the squadron, 148 in number, were cultured and one carrier detected. The meningitis case remained with his company for four days before he was sent to the hospital. The low percentage of positive carriers (.65%) found under these circumstances can be explained only, I believe, by the warm weather, open tents, and outdoor life.

The squadron was cultured according to a pamphlet* received from the Surgeon General's office, which reads:—

"XII. INDICATIONS FOR CULTURING. On the appearance of a case of cerebrospinal fever, all contacts should be cultured for the detection of carriers as soon as possible. By contacts is meant those closely associated with the patient —that is, all those in the same tent or squad room with him, as well as his close associates at mess or elsewhere.

"Experience has shown the inadvisability of attempting to culture larger groups than these.

"In military service, those who give positive cultures should be held in the detention camp

* Standard Technic of Meningococcus Carrier Detection. Adopted by the Medical Department of the United States Army and Navy and the United States Public Health Service.

until they have had three successive negative cultures at five-day intervals. If the second case appears in the same company within a week of the first case, the whole organization should be swabbed."

In this particular group it meant to run chances with the whole squadron, which was under orders to leave, to be kept another week should another case have developed; while it was just as easy for us to culture the whole squadron as it was the tent-mates only. The isolation of the positive carrier found in this squadron at large minimized that chance.

I feel that our experience here in camp fairly warrants the statement that the whole company or squadron messing together should be considered "contacts" and all cultured twice or three times if possible. All this can be done within one week and the squadron released, while the carriers are isolated for treatment and observation.

DURATION OF THE CARRIER STAGE.

It is interesting to note the length of time that the carriers persisted in having meningococci in the nasopharynx. Out of a total of 56 isolated, 24 were treated in the hospital, where records have been kept. As will be seen in table 2, out of the 24 carriers treated in the hospital, the treatment with Dakin's solution and dichloramine-T. has been recorded in 10 cases. One of the remaining cases is recorded as having been treated with Dakin's solution alone. Although the treatment was not recorded in the other thirteen, from personal information, however, by the head nurse of the ward where the carriers were kept, it appears that almost all the others had treatment in some form—either Dakin's solution alone or combined with dichloramine-T.

Out of the 24 carriers three were discharged in five days, nine in six days, three in seven days; one in nine days, two in ten days, five in eleven days, one in twelve days. Thus an average stay in the hospital of seven days, with a minimum of five days and a maximum of twelve. Here, too, I believe, the warm weather as well as the treatment had something to do with the rapid clearing up of the carriers. *We had no chronic carriers.*

Two nurses and one physician taking care of the meningitis cases were cultured and found positive to meningococcus. All three, however, were found negative at the end of five to seven days. None of the carriers developed meningitis, nor, as already stated, has there developed in any organization a second case once the organization was cultured and the carriers isolated.

II. MENINGITIS CASES.

There were to date in this camp 13 cases of epidemic meningitis. Eleven of these recovered and two died—making a total of 82 per cent. recoveries.

These cases were followed clinically by the ward surgeons under the direction of the chief of the medical service. The diagnosis was made by laboratory findings, the meningococcus being demonstrated in the spinal fluid in each case except the last one (Case 13 on the chart). In this last case a most careful bacteriological examination of turbid spinal fluid of three successive days found all negative bacteriologically. Blood cultures were found sterile and cultures from posterior nares were also found negative to meningococcus. Response of the patient to the antimeningococcus serum—his symptoms and spinal fluid clearing up within four days—was accepted as evidence of its having been an epidemic meningitis case.

Agglutinations were carried out on the therapeutic sera on hand at the beginning in order to establish which of the sera was best to be used. We had New York Board of Health serum and that of a commercial house. The meningococcus obtained from the spinal fluid of the first case of meningitis was used in the test. It was found that while the New York Board of Health serum completely agglutinated in dilutions of 1 to 2,000, the commercial serum only partly agglutinated in dilutions of 1 to 50 and none in dilutions of 1 to 100. Naturally the New York Board of Health serum was recommended and used in all cases. I well recollect the ward surgeon (Lieut. Preston) complaining of the lack of clinical response when he used the commercial serum while we ran out of the New York Board of Health serum for a short time. We felt that the clinical findings corroborated the agglutination reaction. I feel, that our low mortality (18%) is in a great measure due to the use of a therapeutic serum demonstrated by laboratory methods to be effective against the particular type of meningococcus we had to deal with.

The data here given on the thirteen cases were obtained entirely from a critical analysis of the clinical records. All this data will be

found tabulated in detail in Table III. It is of interest to note that eleven of the thirteen cases occurred within twenty-five days (January 16 to February 10), which were the coldest days of the winter. Four of these eleven cases came to the hospital in one day, each from a different squadron. The twelfth case appeared on March 30, about seven weeks after the last case; and case thirteen appeared in about seven weeks after that. The first eleven cases would suggest that the disease had started to assume an epidemic form and that the measures taken for the isolation of the carriers had probably considerable to do in checking it. The last two cases are apparently sporadic in nature.

Symptoms on Admission. The symptoms on admission are worth calling attention to. Nine had headache and stiffness or pain in neck muscles. Four were comatose on admission with stiffness of neck or positive Kernig's.

I wish to emphasize here that while it is fairly easy to make a diagnosis when the patient shows definite symptoms of meningitis that are severe enough to leave no doubt in one's mind, it is of extreme importance, however, to make a diagnosis early in those cases that present indefinite or rather mild symptoms, if the spread of the disease is to be avoided. I believe that if attention be paid to the following symptoms: Headache, pain or stiffness of the neck muscles with a positive Kernig's, and when in doubt a culture for meningococcus be made from the posterior nares, and finally a lumbar puncture done, the diagnosis could be settled without difficulty. The lumbar puncture, if properly performed, does not jeopardize the patient in the least and is the best means of definitely establishing the diagnosis.

Prognosis. There were four cases admitted to the hospital in a comatose condition and recovered, while the two that died came in with symptoms not so grave. The onset of the disease—at least under serum treatment, as far as could be judged from this small series of cases—is no criterion as to the outcome of the case. This fact has been referred to by Flexner[1] and others.

The average length of time that those of the patients who recovered showed symptoms of meningitis after the serum treatment was begun is 8.6 days, the maximum being 14 and the minimum four days.

The average length of time that the recovered cases remained in the hospital for meningitis was 45 days, with a maximum of 110 days and a minimum of 23. The case that remained in the hospital for 110 days is the one that had a relapse 31 days after his first attack and during convalescence.

The average number of doses of antimeningococcus serum administered was eight, with a maximum of seventeen and a minimum of two.

Three of the cases received the first dose of serum on the first day of the disease; four on the second, two on the third, one on the fourth, one on the fifth, one on the sixth, and one on the thirteenth day.

There does not seem to be, in this series, any relation between the day in the disease the serum was begun and the mortality. In fact, in the two cases that died the serum treatment was begun on the second day in each.

COMPLICATIONS AND SEQUELAE.

An analysis of the records show the following complications to have occurred among the thirteen cases:

Ear. One case that showed marked deafness on the next day after being admitted, grew steadily worse and died in 18 days. The second case had a transient pain which yielded to treatment. Ear complications, 18 per cent.

Eye. One case had double vision and paralysis of the right rectus muscle, and another a mild conjunctivitis; both recovered. A third case was left with blindness of the right eye, diagnosed by the eye specialist as amaurosis, either of nerve or brain origin from behind the retina. Eye complications, 23 per cent.

Arthritis. None of the cases were recorded as having had a true arthritis.

Mental. One case developed a psychosis diagnosed as dementia precox, and is still in the hospital. He is the only case that developed a psychosis—making 9 per cent.

Orchitis. There were two cases with orchitis and both recovered (18%).

Serum Disease. There were four cases that developed serum disease. In two, on the tenth day following the administration of the first dose of serum, one on the fifteenth day and one on the seventh day after the first serum treatment for his relapse—this last case had no serum sickness while being treated for the first attack.

Five of the thirteen cases showed no complications.

In the eleven cases that recovered, five had no complications and no sequelae. In four of the remaining six cases the complications were of a transient nature and they made a complete recovery; while of the other two, one is still in the hospital with a psychosis and the other was discharged with blindness of one eye. The other eye has $^{20}/_{70}$ vision.

Relapse. Only one case had a relapse of the meningitis while convalescing in the hospital—thirty-one days after the first attack, but finally made a good recovery.

Mortality. The mortality of this series of 13 cases is: (13 cases, 2 deaths)=18 per cent.

The mortality of this disease as given by Flexner[1] in epidemics of this disease in various parts of the world ranged between 42% and 90% in those cases that were not treated with serum, and from 25% to 30% in those cases that were treated with serum. Our mortality of 18% is certainly a very satisfactory one.

SUMMARY.

It may be well to bring together here briefly all the facts that were brought out in this paper.

The total number of cultures studied was 6,926 on a total number of 2,568 individuals—made up of 18 groups (9 squadrons, 3 companies, 5 wards, and one group composed of guards and prison mates). The number of positive carriers found was 56, making 2.25% of the total cultured. The highest percentage in any group was 5.3%. None of the groups could be called "close contacts," because of the open-air life which obtained in the squadrons; and in the wards the patients were kept in bed. The average length of time in 24 of the 56 carriers, where records were kept, that the meningococcus persisted was seven days—a maximum of twelve and a minimum of five days. Practically all the 24 carriers had some treatment while they remained in the hospital. We had *no chronic carriers.* Whether the treatment had anything to do with the way the carriers cleared up is hard to tell; the treatment is simple and worth doing. The fact that at no time did we have a second case develop in any of the groups that were once cultured and the carriers isolated does, I believe, demonstrate the value of the method of procedure we have carried out in this camp.

There were 13 epidemic meningitis cases in this camp; eleven occurred within 25 days (January 16 to February 10), which were the coldest days of the winter. The last two cases could be considered sporadic in nature. Four of the eleven occurred in one day (January 28). The cold weather apparently causes a more intimate association of the men and direct transmission from carrier to susceptible individuals is here suggested.

Lumbar puncture has been the final and definite means of diagnosis in this series, and it cannot be emphasized too strongly that, in cases with symptoms at all pointing to meningitis, more especially when other cases of meningitis have occurred, lumbar puncture should be resorted to and done early. It should be done not merely from the standpoint of the patient and diagnosis, but for the sake of the many as a public health measure.

The average length of time that the patient actually showed symptoms of meningitis after serum treatment was instituted was eight days. A maximum of fourteen and a minimum of four days.

The average number of doses of serum given was eight—a maximum of seventeen and a minimum of two.

The sequelae of the cases that recovered were: One is left with loss of sight in one eye, and another with a psychosis. Five had no complications at all and the complications in the others were fairly transient in nature. (The four with the serum disease and the two with orchitis recovered.)

CONCLUSIONS.

The only conclusions that may be drawn from the foregoing are:

1. The whole company or squadron who mess together should be considered "contacts" and cultured for carriers upon the appearance of a case of meningitis.

2. The culturing of a whole company for three successive times at intervals of two or three days will minimize the possibility of overlooking any positive carriers.

3. Five per cent. blood glucose agar plates is the easiest of access and has given the best results. It also makes it possible to identify hemolytic streptococcus carriers.

4. The serum treatment seemed to have reduced the mortality of this disease in this

camp to a minimum (18%). The therapeutic value of the serum to be used may be determined by agglutination tests, using the particular organisms isolated from the cases as they appear.

In concluding, I wish to thank Lieutenant-Colonel S. W. French, the commanding officer of the base hospital, for his hearty coöperation in carrying on this work. I also wish to express my appreciation to Lieutenants J. H. Murphy and O. C. Hirsch, who have done a considerable part of the laboratory work connected with this study.

TABLE I. "CONTACTS" CULTURED.

No. of Group	Organization	Date	No. of Culture	Negative	Positive	Total Cultures	Total No. of Individuals	Per Cent. Positive Carriers	Remarks
1	Co. A, 126 Inf.	12-17-17	1st	186		186	186	.45%	Not "Close Contacts." Meningitis case died while on furlough upon arrival in Chicago.
		12-18-17	1st	35	1	36	36		
		12-20-17	2nd	207		207			
		12-24-17	3rd	217		217			
2	Sqd. 30, A. S. S. C.								First meningitis case in camp.
		1-17-18	1st	198	1	199	199	2.5%	"Moderately Close Contacts."
		1-19-18	2nd	188	3	191			(1 positive Streptococcus Hemolytic carrier also found).
		1-22-18	3rd	190	1	191			
3	Sqd. 15, A. S. S. C.	1-21-18	1st	190		190	211		Difficult to explain absence of carriers. See text.
		1-25-18	2nd	211		211			
4	Ward 23, B. H.	1-22-18	1st	53		53	56		Meningitis case developed in ward following measles. No carriers.
		1-23-18	2nd	56		56			
5	Sqd. 43, A. S. S. C.	1-22-18	1st	184	5	189	191	3.13%	Not "Close Contacts." Meningitis case developed after 10 days in hospital, following measles.
		1-24-18	2nd	191		191			
		1-28-18	3rd	185	1	186			
6	Ward 20, B. H.	1-28-18	1st	43		43	43		A ward of not "Close Contacts." No carriers.
		1-30-18	2nd	43		43			
7	Co. L, 128 Inf.	2-2-18	1st	191	1	192	196	1.5%	Not "Close Contacts." Case fairly fulminating.
		2-3-18	2nd	189	2	191			
		2-5-18	3rd	196		196			
8	Sqd. 5 & 375, A.S.S.C.	1-31-18	1st	187	3	190	197	1.5%	Case comatose when admitted. Probably not "Close Contacts." (1 Positive Streptococcus Hemolyticus).
		2-4-18	2nd	197		197			
		2-6-18	3rd	195		195			
9	Sqd. 61, Rct. A.S.S.C.	1-29-18	1st	198		198	198		Fulminating type of Meningitis. No positive carriers. Inverse relation of severity of disease to percentage of positive carriers suggested.
		2-5-18	2nd	198		198			
		2-9-18	3rd	197		197			
10	Sqd. 28, Rct. A.S.S.C.	2-3-18	1st	182	7	189	191	5.3%	1st meningitis case in group not diagnosed until 3 days after 2nd case occurred. (2 Positive Streptococcus Hemolyticus).
		2-5-18	2nd	184	1	185			
		2-11-18	3rd	189	2	191			
11	Sqd. 56, Rct. A.S.S.C.	2-7-18	1st	189	2	191	191	4.2%	Case comatose when admitted. Necessity for 3 cultures shown. See text.
		2-10-18	2nd	186	4	190			
		2-13-18	3rd	185	2	187			
12	Grd. & Pr. 324 Rmt.	2-12-18	1st	22	1	23	23	4%	Supposed to be "Close Contacts." Guard and Prison inmates.
		2-14-18	2nd	23		23			
		2-16-18	3rd	21		21			

No. of Group	Organization	Date	No. of Cultures	Negative	Positive	Total Cultures	Total No. of Individuals	Per Cent. Positive Carriers	Remarks
13	Sqd. 19 & 375 A. S. S. C.	2-9-18	1st	189	4	193	193	5%	Meningitis case mild. Per cent of Positive Carriers relatively high. See Text.
		2-12-18	2nd	188	3	191			
		2-14-18	3rd	185	3	188			
14	Ward 20, B. H.	2-3-18	1st	28		28	29	3.4%	Patient in bed 10 days. Per cent. of positives low. (1 Strep. Hem.) See 15.
		2-5-18	2nd	29		29			
		2-6-18	3rd	28	1	29			
15	Ward 6, B. H.	2-4-18	1st	44		44	44		Case in bed 5 days. No spread of infection when in bed is suggested.
		2-6-18	2nd	41		41			
		2-8-18	3rd	34		34			
16	Ward 18, B. H.	2-6-18	1st	35		35	35	2.8%	Case in ward few hours. (1 Strepto. Hemolyt. Posit.)
		2-7-18	2nd	34	1	35			
17	Hdq. Co. 21, F. A.	4-1-18	1st	191	5	196	196	3%	Case mild, 4 days in Co. before sent to hospital. See remarks on group 18.
		4-3-18	2nd	191	1	192			
		4-5-18	3rd	191		191			
18	Sqd. 616, A. S. S. C.	5-18-18	1st	5		5	153	.65%	Mild case. Here warm weather may explain low positive per cent. See text.
		5-20-18	2nd	5		5			
		5-20-18	1st	147	1	148			
	Total			6870	56	6926	2568	Average 2.25%	

TABLE II. MENINGOCOCCUS CARRIERS.

Case No.	Reg. No.	Co. or Sqd.	Organization	Date of Admission	Date in Hospital	Treatment
1	7304	30	A. S. S. C.	1-18-18	10	Dakin's Solution and Dichloramine T. Oily Spray.
2	7564	30	A. S. S. C.	1-22-18	6	Dakin's Solution and Dichloramine T. Oily Spray.
3	7563	30	A. S. S. C.	1-22-18	6	Dakin's Solution and Dichloramine T. Oily Spray.
4	7562	30	A. S. S. C.	1-22-18	6	Dakin's Solution and Dichloramine T. Oily Spray.
5	7672	30	A. S. S. C.	1-22-18	5	Dakin's Solution and Dichloramine T. Oily Spray.
6	7891	43	A. S. S. C.	1-27-18	7	Dakin's Solution and Dichloramine T. Oily Spray.
7	7892	43	A. S. S. C.	1-27-18	12	Dakin's Solution and Dichloramine T. Oily Spray.
8	7888	43	A. S. S. C.	1-27-18	6	Dakin's Solution and Dichloramine T. Oily Spray.
9	7889	43	A. S. S. C.	1-27-18	6	Dakin's Solution and Dichloramine T. Oily Spray.
10	7890	43	A. S. S. C.	1-27-18	6	No Record of Treatment.
11	8081	43	A. S. S. C.	1-30-18	8	No Record of Treatment.
12	8292	L	128 Inf.	2-3-18	6	No Record of Treatment.
13	8333	L	128 Inf.	2-4-18	5	No Record of Treatment.
14	8334	L	128 Inf.	2-4-18	5	No Record of Treatment.
15	8462	B. H.	Med. Dept.	2-7-18	9	Dakin's Solution and Dichloramine T. Oily Spray.
16	8727	324	Rmt. Q.M.C.	2-13-18	8	Dakin's Solution only.
17	8762	56	A. S. S. C.	2-14-18	7	No Record of Treatment.
18	10822	Hdq.	21 F. A.	4-4-18	10	No Record of Treatment.
19	10851	Hdq.	21 F. A.	4-5-18	9	No Record of Treatment.
20	10760	Hdq.	21 F. A.	4-3-18	11	No Record of Treatment.
21	10758	Hdq.	21 F. A.	4-3-18	11	No Record of Treatment.
22	10759	Hdq.	21 F. A.	4-3-18	11	No Record of Treatment.
23	10756	Hdq.	21 F. A.	4-3-18	11	No Record of Treatment.
24	10757	Hdq.	21 F. A.	4-3-18	11	No Record of Treatment.

TABLE III. MENINGITIS CASES.

Case No.	Reg. No.	Date of Admission	Previous Illness	Meningococcus in Spinal Fluid	Symptoms: On admission	Cont'd for days	Total Doses Serum	Day in Disease 1st Serum Given	Relapse	Days in Hosp. for Meningitis
1	7112	1-16-18	Measles	Positive	Comatose, stiff neck, Kernigs positive	8	10	1st	No	48
2	6774	1-20-18	Diphtheria Measles	Positive	Headache, stiff neck, Kernigs positive	5	6	1st	No	34
3	7310	1-18-18	"Negative"	Positive	Severe headache, pain in neck	18	11	2nd	No	18
4	7511	1-21-18	Measles Malaria	Positive	Pain in head, vomiting (Fainted at mess)	10	8	13th	No	45
5	7948	1-28-18	Diphtheria	Positive	Comatose 24 hours, delirious 48 hours	14	17	2nd	No	25
6	7950	1-28-18	Mumps Scarlet fever Measles	Positive	Comatose, Kernigs positive, Brudzinskys positive	10	14	2nd	No	37
7	7980	1-28-18	Usual diseases of child.	Positive	Headache, chill, slight rigidity of neck, Kernigs positive	4	4	6th	No	33
8	7921	1-28-18	Measles Jaundice	Positive	Violent chill day before, pain in neck, Kernigs positive	6	11	2nd	No	6
9	8150	1-31-18	Measles	Positive	Severe headache two days before admission, muscles sore	10	11	3rd	No	34
10	8360	2-5-18	Usual diseases of child.	Positive	Comatose, Kernigs positive	6	8	1st	No	48
11	8567	2-10-18	Measles Pneumonia	Positive Relapse (3-13) Positive	Headache, pain over body (3 days before admission). Relapse of meningitis symptoms 3-13-18	4 4	6 4	3rd	Yes on 31st day	110
12	10581	3-30-18	Usual diseases of child.	Positive	Headache, occipital; stiff neck; vomiting; Kernigs positive (for last 3 days)	5	2	4th	No	62
13	12485	5-16-18	Measles Mumps Smallpox	40 cc. very turbid, negative to bacteria	Headache, stiff neck, Kernigs positive (Started 4 days prior to admission)	7	2	5th	No	23

TABLE III. MENINGITIS CASES (*concluded*).

CASE No.	COMPLICATIONS AND SEQUELAE						RESULTS	REMARKS
	Ear	Eye	Arthritis	Mental	Orchitis	Serum Disease		
1	None	Double vision	None	None	Bilateral	Present 10 days of 1st serum	Good recovery	First case in camp. Whole squadron cultured. Five carriers isolated. No other case in same squadron.
2	None	None	None	None	None	None	Good recovery	Admitted with measles. Five days after eruption cleared, meningitis developed. No other case occurred in the ward.
3	Marked deafness, 1-19-18	None	None	None	None	None	Died (Grew worse steadily)	His lack of response to anti-meningococcus serum and deafness suggested complicating pneumo infection. Five doses of anti-pneumo. serum given. Autopsy disproved latter.
4	None	None	None	None	None	None	Good recovery following serum given	In hospital for 10 days with indefinite symptoms when lumbar puncture was done and diagnosis established.
5	None	None	None	Psychosis	Yes, (rt.)	None	Meningitis recovered; psychosis unimproved	Psychosis (dem. precox) set in March 16, 1918. This case is still in the hospital for the psychosis.
6	None	None	None	None	None	None	Good recovery	Complained of severe headache before he became comatose and was sent to hospital. Course uneventful.
7	None	None	None	None	None	Present on 10th day	Good recovery	Diagnosis made in this case five days after admission, by lumbar puncture.
8	None	Blurred vision	None	None	None	None	Died	Fulminating type. Thought to have pneumonia on account of chill and temperature, but lumbar puncture cleared up diagnosis.
9	None	Rt. eye blind, lt. eye 20/70	None	None	None	None	Meningitis recovered; eye unimproved	Lumbar puncture established diagnosis. "Eye condition of nerve origin (?) in back of retina. (Amaurosis.)" (Capt. Heard.)
10	Pain in left ear	None	Pain in legs	None	None	Present on 15th day	Good recovery	Delirious 3 days. Uneventful recovery.
11	None	Conjunctivitis, 3-14-18	Bones, joints & mus. of leg ache	None	None	Present on 7th day of teatment for the relapse	Recovered	On 3-11-18 there was a return of the meningitis symptoms, on 3-13-18 lumbar puncture done and antimeningococcus serum administered. He has left on furlough, June 12, 1918, in good condition.
12	None	None	None	None	None	None	Recovered	Course uneventful.
13	None	None	None	None	None	None	Good recovery	Has made most rapid recovery in the whole series. Posterior nares negative to meningococcus. Blood sterile.

"THE CONTINUOUS INHALATION OF OXYGEN GAS IN PNEUMONIA AND IN OTHER DISEASES."*

BY ALBERT N. BLODGETT, M.D., BOSTON.

IN a paper by S. J. Meltzer, M.D., LL.D., published in the *New York Medical Record* for Oct. 19, 1918, appears an article upon "Insufflation of Oxygen in Pneumonia" (Vol. XCIV., p. 689), in which Dr. Meltzer refers to a paper published by him in the *New York Medical Record* (Vol. XCII., p. 1), upon "The History and Analysis of the Methods of Resuscitation; with a Description of the Author's Pharyngeal Insufflation Apparatus for Artificial Respiration in Man."

In the same paper Dr. Meltzer also refers to an article published by him in the *Journal of the American Medical Association* (Vol. LXIX., p. 1150), upon "The Therapeutic Value of Oral Rhymic Insufflation of Oxygen."

The paper appearing in the *Medical Record* of July 7, 1917, is a rather exhaustive account of the methods of treating asphyxia from early times to the present day, with an elaborate description of his apparatus for this purpose.

This apparatus, as described by Dr. Meltzer in his own words consists of: First, a bellows; second, a respiratory valve; third, a pharyngeal tube; fourth, a T-tube; fifth, a padded wooden board to be used for compressing the abdomen by means of belts. "All these ought to be kept connected and kept in readiness in a small handy bag. In addition to the described apparatus the bag ought to contain: (1) a stomach tube, (2) an appropriate tongue depressor, (3) a roll of tape, (4) a pair of scissors. Bellows, rubber tubing, etc., should be frequently examined for their efficient activity in order that the apparatus should not fail when its application is needed in emergency."

Dr. Meltzer continues: "When coming to a victim who requires immediate artificial respiration the order of procedure should be as follows: First, the application of the abdominal board in order to prevent the entrance of the insufflated air into the stomach and intestines; second, to pull out the tongue as far as possible by means of the forceps; third, to insert the pharyngeal tube of the readily connected apparatus as deep into the pharynx as possible with the flat side of the tube on the tongue. The tongue should now be tied to the tube by means of the tape—not too tight. The tying of the tongue has two purposes: (1) It prevents the falling back of the posterior end of the tongue and of the glottis, and (2) it keeps the pharyngeal tube in place. The working of the bellows with one foot, and the moving of the ring of the aspiratory valve with the thumb of the right hand should be started immediately on tying the tongue of the pharyngeal tube.*"

If any apology is due for my temerity in addressing the *Boston Medical and Surgical Journal* upon this subject after the lapse of twenty-eight years, it may be pleaded in my excuse that the researches of Professor Meltzer in seeking information upon inhalation of oxygen in pneumonia did not lead him to know that in 1890 I published a paper in the *Boston Medical and Surgical Journal* (Vol. CXXIII., p. 481) on "The Continuous Inhalation of Oxygen in Pneumonia and in Other Diseases," with a record of a case in which the oxygen was continuously given for *one hundred and six hours*, with recovery of the patient.

In the place of a battery of Ten Pieces of apparatus, such as no person less skillful than Professor Meltzer could possibly adjust (which must be obtained under his name from George Tiemann & Co., New York), I interposed only a simple wash-bottle between the tank of oxygen and the lips of the patient; the sole purpose of which is to regulate the flow of gas to the patient by the rapidity of the bubbles of oxygen from a small tube in the wash-bottle, by which I found that the rate of about one hundred bubbles in a minute of time sufficed to furnish an amount of oxygen to relieve the impending danger of suffocation, and its continued use was followed by recovery of the patient, from the impending calamity, after a period of *one hundred and six hours* of the *continuous inhalation of oxygen gas.*

* This was the title of the former paper of 1890. It is used here because Dr. Meltzer has ignored the principal features of the whole paper.

** "To my mind, the apparatus which is here described is practically the most efficient one for the execution of artificial respiration in cases of emergency. It is absolutely reliable; it is very easy to handle, and is comparatively inexpensive. My statements which are here made are based upon personal observations. I have, of course, very few opportunities of testing it upon human beings. I have hardly need to state that I have no other motive for pleading for the introduction of this apparatus into medical and Samaritan practice than a scientific and humanitarian interest. The manufacturers are spending immense sums of money for advertising and popularization of their machines. Their agents have no other means of demonstrating the possible usefulness of their respiratory apparatus than by showing its action upon a rubber bag. I need not discuss here the unreliableness of any of these demonstrations; neither do I need to discuss the insufficiency of the evidence derived from the testimony of some physicians. The apparatus, 'Meltzer's Pharyngeal Insufflation Apparatus for Artificial Respiratory Cases of Emergency in Man,' can be obtained from George Tiemann & Co., 107 Park Row, New York. It is not patented. Its cost is probably less than one-fifth that of the patented apparatus."

Dr. Meltzer's instructions are precise, and are transcribed in his own words: "When coming to a victim who requires the immediate artificial respiration (supposing that the "small" handy bag is obtained from Messrs. Tiemann & Co.) the order of procedure should be as follows: First, the application of the abdominal board in order to prevent the entrance of the insufflated air into the stomach and intestines; second, to pull out the tongue as far as possible by means of the forceps; third, to insert the pharyngeal tube of the readily connected apparatus as deep into the pharynx as possible with the flat side of the tube on the tongue. The tongue should now be tied to the tube by means of the tape—not too tight. The tying of the tongue has two purposes: (1) It prevents the falling back of the posterior end of the tongue and of the glottis, and (2) it keeps the pharyngeal tube in place. The working of the bellows with one foot, and the moving of the ring of the aspiratory valve with the thumb of the right hand should be started immediately on tying the tongue to the pharyngeal tube."†

"Dr. Samuel J. Meltzer of New York said that about eight years ago he constructed a simple apparatus for intratracheal insufflation for Dr. Carrel. He had seen in many cases of his experimental dogs in which the thorax was transversely opened widely, double pneumothorax. These dogs recovered without having had infection. In the course of the last year Meltzer demonstrated to several hundred military officers anesthetized and curarized dogs with the chest wide open. The entire heart was exposed to full view. The animals were kept alive and with normal blood pressure by the method of pharyngeal insufflation. The experiment never failed. He had often demonstrated a fact of practical importance, namely, that if artificial respiration was sufficient the heart could be handled freely with impunity. Artificial respiration was very useful during anesthesia, and was indispensable in major operations upon the thoracic cavity."

Dr. Meltzer states that "he has very little opportunity to test his apparatus upon human beings," and his experiments are accompanied by such fatal mutilation of the animals used in demonstration that it may well be doubted if he could prevail upon a "human being" to undergo the peril.

† From the *Medical Record* of Nov. 16, 1918.

In the presence of an *actual* Patient, in an *actual* Sickroom, it would seem that such a degree of detail and of apparatus might well consume so much time, which is of *Supreme Importance* in so imminent peril of death, that the victim would inevitably die before the arrangements could be completed; and the melancholy ministrations of the undertaker could be finished before the apparatus for resuscitation could be brought into application to the unhappy victim.

LOSS OF FAITH AS A WOEFUL OUTCOME OF TODAY'S SPECIALISM.

By Beverley Robinson, M.D., New York.

Scarcely a day passes without this sad truth being brought home to me, at the present time; and, unfortunately, the trouble does not grow less, but increases all the while. Let me give a few concrete examples.

A young woman, tired out nervously with war work, had a very painful facial neuralgia, which recurred during the night and was cured only with a nerve tonic and the use of repeated small doses of codein. Unfortunately, she was told, and, indeed, thought herself, that it was possibly due to her teeth. She consulted the dentist. He could find nothing apparently amiss, but thought it wise to have an x-ray picture taken by a radiologist. The result of this expert's investigation was to show what to him meant an abscess about the roots of two important teeth and extraction of one immediately, was advised. The other tooth, he thought, might possibly be saved by considerable refined dentistry. The patient then consulted another radiologist. He was not confident as to the proper interpretation of his radiograms and wished the patient to see another dentist. This she did, and he advised immediate extraction of both teeth. She finally consulted a third dentist. He reserved decision until he could see and determine the meaning of the radiograms. The patient has been much upset, has lost sleep and not unnaturally, since she has been informed that if she retains these diseased teeth (if they be so) she will suffer in health: and, indeed, that it has already been much and imminently jeopardized.

As I have stated, the painful neuralgia was entirely cured before the fresh dental work was begun and before either or both teeth were extracted. Alas, the pity of it!

A young married woman, with two small children, has for herself and husband a very able practitioner in every way, who is a hospital physician both to a general hospital and to a children's hospital. Albeit, he is not known as a pure child's specialist. The mother has imbibed the idea that he is not thoroughly competent to look after her children, because he is not so labelled. She gets this idea primarily from some of her kind friends. Again, she criticizes mentally because her own physician does not find it essential to exaggerate minor ailments and to institute all sorts of useless, very troublesome doings, by reason of the very modern foolishness of acidosis, a new term used to cover up a very old idea and to prey upon the tender nerves of too anxious mothers. Finally, the children's specialist, in a way, although prominent mainly as an obstetrician, calls and calls again to advise and control a system of modified feeding, internal medication and above all, frequent saline, or alkaline high injections, necessitating the presence of a trained nurse and forced housing to an active little fellow whose whole disturbance could be mended with a few moderate doses of rhubarb and soda mixture and a little judicious limitation of his food, which was rather excessive.

I could go on *ad nauseam*, or *ad infinitum*, with examples. One more and I have done, except for a few moral, or philosophical reflections.

A patient has specks before his eyes. He consults several prominent oculists. None agrees wholly with the previous one. He is told it comes, possibly, from his kidneys. He is told there is thickening of the coats of the ocular vessels as seen with the ophthalmoscope. He is told he has eye strain and must not read, or use his eyes at all, or very little, for a time. He is told his eye-glasses are of no use; indeed, worse than useless. He must have a new pair, a very expensive one, because the formula of the new glasses is very complicated and requires the finest, most skilled work of the oculist and of the optician. His medical adviser of many years, who has already saved him more than once from the hands of the philistines, who would have made him mentally a wreck with declaration of chronic nephritis, and again with ulcer of the stomach, because of recurrent dyspepsia, now saves by simply stating that such specks often disappear as suddenly as they come and leave not a trace behind of any ailment of consequence.

Now where does all this lead except to one thought, namely, poor human beings who today are being exploited in many directions in medicine and surgery, not simply by quackery, but by those who are honest and well intentioned, we might admit, but who have themselves a concentrated over-valuation of their own special knowledge and hence ultimately the downfall of the patient's faith in medicine, or those who profess the calling.

To the old, time-honored practitioner, this is all lamentable in the extreme and should be remedied, if at all possible, now. But how? I know of only one way. Get your practitioner, in whom you believe, because you know he has education, experience, common sense, loyalty, disinterestedness, and stick to him. When he wishes a consultation, have it, but still believe in him and trust him above all others. If he can learn something useful to guide him, he will gladly avail himself of it; if he feels that you would be better off in the hands of another, for some special ailment and for a time, he will tell you so—but be sure that the specialist does nothing, at any time, that does not meet with his consent and approval. He is, and must be, the final consultant, and is the wisest, probably, of them all, and the one who is by all odds most valuable to you, and you should show your appreciation of it, not merely by a few words of passing thanks, but by paying him liberally for all he does for you and, surely, quite as much as you do to the physician who simply looks after a small piece of your bodily make-up and who gets a big, round fee, as a rule, for special skill, it may be, in a very limited direction, but who has not for you and many others "borne the burden and heat of the day" and never will.

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THE RAT AND INFANTILE PARALYSIS.

The question of the rôle of the rat in the spread of infantile paralysis has aroused considerable interest and speculation. A pamphlet issued recently, "The Rat and Infantile paralysis—A Theory," by Mark W. Richardson, M.D., presents evidence which is conducive to the belief that this disease is due to a precedent infection of rodents. Dr. Richardson presents evidence against the human contact theory as a determining factor in the spread of this disease and suggests that the epidemiological facts could be better harmonized if one assumed an antecedent and underlying infection of rodents, and the mediation of the flea.

Whoever has seen a city slum street in summer cannot imagine more intimate personal contact than is enjoyed by the tenement children playing in the crowded, hot, dusty thoroughfare, and yet it appears that cases of infantile paralysis might be numerous in the tenements on one side of a street, with no cases whatever in similar houses opposite. In one district investigated, the contagion appeared to be quite sharply localized in the quadrangle formed by the tenements bounding a city block, and did not travel across the street in spite of all the human migrations and opportunities for direct and indirect contact. If human carriers could not carry the infection across the street, then it is equally improbable that the cases in the same block were transferred one to the other by human agency. On the other hand, the unrestricted migration of infected rats over the back yards enclosed by such tenement quadrangles would explain quite adequately the sharp localization of the human cases. A somewhat parallel phenomenon has been seen in plague conditions in India, where people of different castes never associate with each other. In spite of this absence of human contact, plague spreads from caste to caste. The explanation is, in the end, simple: although personal association is forbidden, the houses, fronting oftentimes on different streets, have adjacent back yards over which rats travel freely.

Up to 1890, bubonic plague had been restricted to certain well-defined areas of Asia but during the last twenty-five years, this disease has spread over the whole world. Within the same period of time, infantile paralysis, which previously had been noted in single small epidemics, has become world-wide in its distribution, with outbreaks much more numerous and of much larger size. This recent spread of plague may be attributed to the marked increase in the world traffic in grain, for no fact is better established than the intimate relation of bubonic plague to the grain business.

The fact that infantile paralysis occasionally invaded the homes of the well-to-do has been used as an argument against rodent infection as preliminary to human cases. It is, however, well known that rats may be present in localities where they would least be expected. Furthermore, pet animals might perfectly well carry to the children infected fleas. In bubonic plague it has been found that although the rat flea prefers its natural host, it can, in the absence of such natural host, be found on

practically all domestic animals. Furthermore, the human flea, *Pulex irritans*, has been found upon rats, and can, on occasion, transfer bubonic plague from animal to animal.

It is of interest to note that in bubonic plague the primary bubo is, in the great majority of instances, in the groin. This is, of course, because the flea reaches most easily the legs of his victim. In infantile paralysis, the vast majority of children are paralyzed in the lower extremities, either alone or in combination with other parts of the body. This marked excess of paralysis in the lower extremities is strong presumptive evidence that the infection takes place through the lower extremities.

Another point of similarity shown by infantile paralysis and bubonic plague is seen in the fact that it is rare to have more than one case in a single house or family.

The following conclusions are presented in this pamphlet:

1. Although the virus of infantile paralysis has been demonstrated in the secretions and excretions of persons sick with the disease, and (b) healthy third persons who have or have not been in contact with patients, and although such secretions and excretions may in animal experiment remain active for many months, the epidemiological facts are strongly against the theory that infantile paralysis is spread from person to person by direct or indirect contact. On the other hand,—

2. The epidemiology of infantile paralysis corresponds so remarkably with that of the bubonic plague, a disease known to be due to the rat and flea, that it can be stated with great probability that human infantile paralysis is due to a precedent and underlying infection of rodents.

3. As with bubonic plague, final proof as to the rôle of the rat and the flea in infantile paralysis must rest in elaborate laboratory investigation.

EPIDEMIC INFLUENZA AMONG AMERICAN SOLDIERS ABROAD.

DURING the course of the influenza epidemic, the infection has spread to a considerable degree among the troops of the American Expeditionary Forces. The United States Public Health report of November 22 contains a review of army conditions.

"During the past two months a second wave of severe influenza infection has swept over France and has spread to all the countries of Europe in about equal force. In the United States the onset of the epidemic was, as is usually the case with pandemics of influenza, about three weeks later than in London and Paris. The first and rather benign phase of the infection, it will be remembered, began in the middle of April and had largely disappeared in the American Expeditionary Forces by the end of July. The second phase, which has not yet reached its maximum incidence, has been characterized by a much higher percentage of initially severe cases, and particularly of pulmonary complications. Coming at the time of the rainy and changeable weather, this new invasion of infectious colds and coughs has been accompanied by a constantly increasing number of pneumonias. New replacement draft detachments arriving with each convoy have added the heaviest percentage of infected men per strength and have shown the highest percentage of complicating pneumonia. It has been a usual observation that when infections of the upper respiratory tract prevail, the incidence of meningitis in the community increases soon after, and this rule prevails at present. An increasing severity of the pneumonia is commonly found when the disease is permitted to pass rapidly through successive hosts."

The areas of heaviest infection of influenza, pneumonia and meningitis in the American Expeditionary Forces are the base ports, the depot divisions, and such training areas in both S. O. S. and advance zones as have received replacements or new organizations still including men exposed to the massive infection which has prevailed on the transports and on troop trains.

In order to prevent the frequently recurring infections introduced through base ports by incoming troops, unusual precautionary measures have been adopted. Men with colds, coughs and fevers are excluded from transports at ports of embarkation, and all troops are equipped with three blankets, an overcoat, and winter-weight woolen underclothing. The number of men carried on transports has been reduced to 80 per cent. of berth capacity, and

hospitalization capacity has been increased to four per cent. of the troops. Ready shelter has been provided for troops arriving at base ports and for a period of four days no heavy duty is required. There is now adequate medical supervision of troop trains. The concerted effort of all medical officers in the application of all measures of local sanitation in order to avoid further extension of influenza with its complicating pneumonias and often coincident meningitis has been required.

Special interest attaches to the statement concerning the mild epidemic of influenza in the American Expeditionary Forces preceding the severe epidemic now in progress. To many who have followed the course of events this will be a reminder of the mild griplike disease which prevailed in a number of cities in this country last winter. Is it possible that there was a direct relation between these outbreaks? It would be interesting to have available accurate information regarding the prevalence of a griplike infection in various parts of the United States last winter and to see what effect, if any, this had apparently exerted on the course of the severe influenza epidemic just passing. It will be noted that in the American Expeditionary Forces, "the heaviest percentage of infected men per strength and the highest percentage of complicating pneumonias" occurred among new replacement draft detachments. Is it possible that the other men possessed a certain degree of immunity because of the earlier mild outbreak?

MASSACHUSETTS MEDICAL SOCIETY: ANNOUNCEMENT.

THE attention of the members of the Massachusetts Medical Society is called to the slip which will be found in this copy of the JOURNAL at the index page. It is hoped that the Fellows of the Society will take advantage of this reminder and pay their dues promptly, without waiting to receive a personal bill. This will greatly aid the work of the district treasurers. A. K. STONE, *Treasurer*.

MEDICAL NOTES.

INFLUENZA IN SAMOA.—Six thousand deaths due to influenza have occurred in Samoa. The Australian Government has dispatched a medical staff.

THE WISCONSIN ANTI-TUBERCULOSIS ASSOCIATION.—The program of the annual meeting of the Wisconsin Anti-Tuberculosis Association in Milwaukee, on December 13 and 14, centered about the establishment of free and pay tuberculosis clinics in every suitable Wisconsin county, and was, therefore, of particular interest to physicians.

At the meeting a public health program for the ensuing year was offered, with particular emphasis on tuberculosis. Changed conditions, in particular the uncovering of a large number of cases of incipient tuberculosis among discharged soldiers and draft rejects, have convinced the association that the next link to be forged in the chain of defenses against tuberculosis is the dispensary.

Dr. Michael M. Davis of Boston, one of the foremost authorities on clinics in the country, told of his experience. The meeting was also addressed by Prof. John R. Commons of the University of Wisconsin, and Dr. Donald B. Armstrong, head of the famous Framingham, Massachusetts, experiment, who described a community organized against tuberculosis.

Friday morning and afternoon sessions were held at the Association headquarters, 471 Van Buren street. At the Friday evening dinner at Gimbel's Grill, there were speakers of national reputation. Mr. H. O. Seymour, manager of the Red Cross Christmas Roll Call, acted as toastmaster.

FOR BETTER RURAL HEALTH.—Much remains to be done in rural districts, according to the annual report of the Secretary of Agriculture, to control such pests as mosquitoes and the hookworm, to eliminate the sources of typhoid fever, and, even more, to give the country districts the advantage of modern hospitals, nursing and specialized medical practice.

Noting that many agencies, some of them private enterprises with large funds, are working for improvement, the report says that the Department of Agriculture, through its home demonstration service, is giving valuable aid, and the public health service is increasingly extending its functions.

To what extent the further projection of effort is a matter for State or local action re-

mains to be determined, says the Secretary, but it seems clear that there should be no cessation of activities until there has been completed in every rural community in the Union an effective sanitary service and, through the provision of adequate machinery, steps taken to control and eliminate the sources of disease and to provide the necessary modern medical and dental facilities, easily accessible to the mass of the people.

WINTER HIBERNATION OF ANOPHELES LARVAE.—It has been accepted generally that with the advent of cold weather anopheles become inactive, and upon the freezing over of the water, or even before, they are destroyed. Investigation of conditions in America show that this is not always true. The following observations reported in the Public Health Report for November 15 are of interest in this connection.

1. Anopheles (*crucians* and *punctipennis*, at least) pass the winter in the larval stage. This is true for northern Louisiana (for *crucians*) during a severe winter for that section. Evidence, though less conclusive, shows that *punctipennis*, at least, in the larval stage withstand a severe eastern Virginia winter.

2. Apparently pupation does not occur at low temperature, or until ordinary room temperature obtains.

3. In selected places considerable numbers of anopheles larvæ pass the winter as such.

4. Larvacides should be applied in the fall sufficiently late to kill the last batch of larvæ, or before season suitable for the completion of their aquatic stages in the spring.

CRAIG COLONY FOR EPILEPTICS.—The Craig Colony for Epilepties, located at Sonyea, New York, was founded in 1894, and has been maintained by State appropriations. As originally designed, it was the plan of the promoters of the Colony to provide housing and maintenance for at least two thousand patients. This is the ultimate capacity toward which the Colony is progressing.

The twenty-fourth annual report describes the condition and activities of the patients. The importance of increasing the facilities for every possible occupation is emphasized, both from the remedial effect which it has upon patients and for the real economic value of their work. Gardening, agriculture, forestry, brick-making, and tile-making have offered a diversity of occupations. Many of the children have been educated in the lower scholastic branches and in manual work to quite a degree. Patience, tact, and the ability to recognize psychic conditions have been of fundamental importance in working with patients.

During the year, there were several cases of measles, scarlet fever, and diphtheria, causing one death. Forty-two patients left the Colony without permission. Of these, twenty-seven were returned, ten reached home, and four were not accounted for. 1467 patients were admitted during the year. Since the opening of the Colony in 1896, there have been 4,687 patients under treatment, 80 of these have been discharged as recovered, 628 improved, 779 unimproved, and 152 insane. The report contains information about the prognosis and treatment of epilepsy, and includes the case histories of more than 125 patients.

MUNICIPAL COURT OF CHICAGO.—The court offers insight into many conditions of scientific, as well as legal, interest. In the tenth and eleventh annual reports of the Municipal Court of Chicago, the importance of psychopathic investigation is shown by the following ten conclusions, which have been drawn from the material presented in the reports:

I. That delinquency and defectiveness are practically synonymous, the principal forms of defectiveness being dementia precox, psychopathic constitution and feeble-mindedness, alone or in various combinations, psychopathy being the more active instigator, feeble-mindedness the more passive.

II. That defectiveness is also practically at the bottom of most of our dependency, unemployability, alcoholism, asociability, wife desertion, etc.; in fact, is synonymous with sociopathology, and is undoubtedly playing an important rôle in many other mental and physical diseases and accidents.

III. That in the matter of sociopathy, psychopathy (heredity) is an intrinsic factor and environment an accessory factor.

IV. At large, defectives, socially, economically, industrially, in Army and Navy, are a heavy economic and social burden. In appropriate institutions, this burden is to a large degree eliminated.

V. That annually, with statistical punctiliousness, there is a new quota of defectives thrown on the community, that will have to be reckoned with throughout their career.

VI. That these cases run true to form, whether it be in school, business, or socially.

VII. That our laws, penal institutions, and sociological efforts have all handled the problem thus far objectively, completely ignoring the subjective side, the individual himself, with only failure to record. Sociologically, hereafter, just as we have learned in medicine, we will have to "treat the case."

VIII. That new laws and institutions conforming to scientific advance are demanded.

IX. That all courts should have psychopathic laboratories at the service of both sides of a case. Cities should maintain laboratories, where school

children and others may be examined and disposition advised. By recognizing defectives early, they can be committed to colonies and crime anticipated to the advantage of the individual and his family, as well as society.

X. That universities should provide training along these lines in order that we may have enough properly trained and equipped experts to carry on the work and extend research in these fields. Brain laboratories are badly needed adjuncts. Medical and law students and students of sociology should have adequate instruction along these lines.

WAR NOTES.

PREVENTION OF DISEASE FROM RETURNING SOLDIERS.—In an address before the American Public Health Association, Surgeon-General Rupert Blue, of the United States Public Health Service, pointed out the need of special vigilance on the part of health authorities in order to prevent the introduction and spread of dangerous epidemic diseases by our returning soldiers. Furthermore, he urged wider interest and a greater participation on the part of the people in public health work.

"The work of the medical department of the British, French and American armies has shown," said Dr. Blue, "what could be accomplished by well-planned, thorough-going health measures. When the history of the present war is written, not the least significant part will be that which records the achievements in the field of preventive medicine. Anyone familiar with the histories of other wars will realize that hundreds of thousands of lives have been saved as a result of the excellent work in sanitation and preventive medicine carried on by the British, French and American military forces."

Presenting a program which called for intensive health work carried on by the United States Public Health Service in coöperation with state and local health authorities, Surgeon-General Blue insisted that "what can be done among soldiers in the unfavorable environment of war, can and should be done among the civilian population in the more favorable environment of peace."

Dr. Blue deplored the fact that it was so difficult to interest the general public in matters relating to sanitation and preventive medicine. Well planned health work, he said, constituted really wise economy, for it not only conserved our national strength, but actually reduced expenditures for the treatment and care of illness and death.

The program prepared by the United States Public Health Service suggests that much of the work can best be carried out by a plan which provides for Federal and State participation in local health work whereby each bears a portion of the expense. Special emphasis is laid on matters dealing with industrial hygiene, on improved rural sanitation, the prevention of diseases of infancy and childhood, and on popular health education. In connection with the last named, the Public Health Service contemplates constituting itself a national center and clearing house for information, advice, and educational assistance on all matters relating to public health and hygiene.

ARMY PRECAUTIONS AGAINST THE SPREAD OF DISEASE.—Secretary of War Newton D. Baker has replied to Governor McCall's recent letter urging that proper precaution be taken to prevent the spread of disease in this country as a result of the return of troops from abroad. The dangers particularly feared by Governor McCall were bubonic plague, cholera, typhus fever, and meningitis.

Secretary Baker has given assurance that the troops will be examined very carefully and given appropriate treatment before they are embarked in France, and that, in addition, a considerable number of beds will be available in army hospitals in Boston and at Camp Devens for returned soldiers. The facilities at the disposal of medical authorities will undoubtedly be sufficient to protect the civil community against the dangers of the transmission of infectious diseases from abroad.

When the steamship *Canopic* arrives with returning soldiers the men will be taken immediately to Camp Devens, where they will be quarantined and mustered out of service.

It has been announced that the West Department of the Boston City Hospital, the old Parental school building in West Roxbury, has been equipped as Boston's base hospital. It offers facilities for the care of nearly 400 men. All cases which go to the new base hospital will be distributed from there to specializing hospitals, and all reconstruction cases will be sent to General Hospital 10, the reconstruction hospital on Parker Hill, Roxbury, combining the Robert B. Brigham and the Elks' Hospitals.

Colonel Albert S. Williams has announced that the Commonwealth Armory, which will

be abandoned by the United States Guards on December 12, may also be used as a receiving hospital. No man who is ill will be discharged from the service. He will be retained and treated or receive reconstruction care until he will not need to be a burden to industry and society. Men incapacitated will receive full compensation for disability from the Government. Efforts will be made to send men to hospitals near their homes before they are discharged.

WAR RELIEF FUNDS.—On December 17, the totals of the principal New England war relief funds reached the following amounts:

Belgian Fund	$721,590.08
French Orphanage Fund	416,201.47
Italian Fund	232,488.83
Lafayette Fund	45,168.41
British Fund	21,139.66

CAPTAIN DOLOFF TRANSFERRED.—Captain Eugene Doloff, who has been in charge of the medical work at Commonwealth Armory, will transfer to the Rufus S. Dawes Hotel on Pine street, on December 12, to be medical officer to the detachment of the 36th Infantry, which will be quartered there.

STUDENTS TO GIVE PLAY FOR SOLDIERS' BENEFIT.—Students of Harvard University and Radcliffe College will present the farce, "Plot and Playwrights," under the auspices of the 101st United States Engineers' Welfare Association, at Jordan Hall on December 17.

NAVY HEALTH CONDITIONS.—The health conditions in the Navy have been excellent and the mortality rate has been low during the war In his annual report, Admiral Braisted, Surgeon General of the Navy, attributes this largely to the increasing appreciation by commanding officers of the rules of hygiene and sanitation. He believes that where defects in the health system have developed, the country's unpreparedness for operation of such magnitude has been the cause.

Compared with an annual rate of 2.7 per 1,000 for ten preceding years, the rate rose during the first quarter of this year to 8.9 per 1,000 per year. Dr. Braisted has expressed the belief that this was due to the circumstances caused by the rapid expansion of the Navy and the unusual weather conditions of the first quarter of the year. The death rate for the second quarter was low, 3.3, a figure closely approaching the average for peace times. The hospital admission rate for the calendar year of 1918 will probably be lower than the average in peace times. During the year, 193 men were drowned, 30 died from exposure, and 47 were killed by gunshot wounds.

Dr. Braisted declares that the war has served to clear the reputations of the men of the Army and Navy of the impression in the public mind that diseases, due to social evils, were more prevalent in the service than outside. The Navy Medical Department began an organized fight against these diseases fifteen years ago, and the conscience of the country has been aroused, until a nation-wide campaign is being waged. not only against the evils themselves, but also against the underlying social conditions on which they flourish.

ARMY HEALTH RECORD.—In his annual report, Surgeon General William C. Gorgas stated that the health of the American Army, both at home and overseas, has been excellent, and that the mortality rate from disease is lower probably than that of any similar body of troops in the history of warfare. Complete statistics of deaths in Army camps are not included in the report, which covers only the fiscal year to June 30, 1918. In 1917 total deaths from disease were 2984 and the death rate per thousand 6.3. This compares with a seven-year average of 4.9 per thousand.

Contrasting this report with that of previous years, Gen. Gorgas points out that if the morbidity of typhoid fever had been the same as in 1898 there would have been 1400 deaths from that disease alone, whereas there were only 23.

Measles is placed at the head of the diseases causing deaths, although the report shows that 65 per cent. of the deaths were due to resultant pneumonia.

COMMISSIONED OFFICERS LEAVE CAMP DEVENS.—Ninety-eight commissioned officers from the infantry and medical corps were released from service at Camp Devens on December 6. Major Samuel J. Mixter of Boston was the highest ranking officer to leave the service. On December 10, one hundred additional officers will be discharged and will return to their homes.

BOSTON AND MASSACHUSETTS.

During the week ending December 7, 1918, the number of deaths reported was 254 against 240

last year, with a rate of 16.89 against 16.20 last year. There were 37 deaths under one year of age against 36 last year.

The number of cases of principal reportable diseases were: diphtheria, 50; scarlet fever, 24; measles, 5, whooping cough, 9; tuberculosis, 36.

Included in the above, were the following cases of non-residents: diphtheria, 3; scarlet fever, 1; tuberculosis, 7.

Total deaths from these diseases were: diphtheria, 4; whooping cough, 2; tuberculosis, 20.

Included in the above, were the following non-residents: diphtheria, 1; tuberculosis, 3.

Faulkner Hospital.—The fourteenth annual report of the Faulkner Hospital, Boston, records an unusual increase in the number of patients cared for. 839 persons were admitted to the hospital and 15,188 days' treatment was given—225 patients more than the previous year and 4,516 more days' treatment given. This is partly due to the opening of the New Maternity Building and to the care which has been extended to men from the radio school in Cambridge, who were received at the rate of 15 men a day for 3 or 4 months.

The maternity building was opened in August, 1917. Since that time, there have been 133 births in the hospital, which is more than twice the number of the preceding year.

X-ray apparatus has been installed. The laboratory work has been increased and the experiment is being tried of having a fourth year student from the Harvard Medical School live at the hospital and take charge of the routine work.

The hospital needs a nurses' home, in order to devote the entire maternity building to patients.

New Influenza Cases.—The latest report to the Health Department includes forty-seven new cases of influenza. This figure is higher than for several preceding days, but the cases are comparatively mild. Health Commissioner Woodward has reiterated his plea for the exercise of caution on the part of the public in avoiding those who are infected with the disease. Over 1030 cases have been reported throughout the State during the recurrence of the epidemic. The victory celebration and congestion in elevated trains are regarded as the sources of the new cases.

In Brockton 121 cases have been reported, but most of them are not severe and many are hardly more than colds.

On December 2, 30 new cases of influenza among the civil population were reported to Health Department officials. The deaths have been fewer, with but two of influenza and two of pneumonia, as against five of influenza and three of pneumonia reported the day before. Health Commissioner Woodward has reiterated his belief that the disease is abating.

Delay in Reporting Cases of Influenza.—State Health Commissioner Eugene R. Kelley, in a recent letter to Gov. McCall on the cause of the recent influenza epidemic, intimates that the disease might have been checked earlier if the first cases discovered at the Commonwealth Pier and in hospitals had been more promptly reported to the health authorities.

The Health Commissioner is reported to have said:

"The bacterial cause of this outbreak is not yet known. A carefully conducted investigation seems to demonstrate that the suspected bacillus influenzae of Pfeiffer is not the true cause of the disease and to raise considerable doubt if it is even implicated.

"The means by which it is spread and the conditions which favor its malignancy are not known. Particularly in reference to the latter point we are still in the dark and can only point to the general sanitary rule that overcrowding is to be avoided.

"A vaccine made of killed influenza bacilli has been used with our authorization in the hope that it might prove of value. The records from a large institution where careful observation was possible seem to show that it was of practically no value as a preventive, although certain other observers under less favorable conditions for observation believe it has real value.

"The history of past outbreaks of influenza has proved the incompleteness of our knowledge in regard to the disease. It has repeatedly swept over all barriers that could be raised against its progress and has encircled the globe. What knowledge we have of its cause and channel of travel is clearly inaccurate, for this outbreak has again followed in the footsteps of previous ones and has swept over us.

"This department was first notified of the presence of the disease by an officer of the Navy Department calling attention to its presence on Commonwealth Pier. We have since been in

formed by hospital authorities in Boston that they had been having a number of cases at that time, but that they had not notified us of the fact.

"This epidemic has been a most serious one. It has killed an appalling number of our people and it has directly and indirectly caused the expenditure or loss of large amounts of money and has temporarily halted the progress of many industries."

U. S. MEDICAL CORPS.—At a recent meeting in Ford Hall of the prison committee of the National Civic Federation the conditions prevailing in correctional institutions in this state were discussed. Major A. N. Thompson of the medical corps, U. S. Army, described the work being done by the medical corps in Massachusetts in dealing with a class of diseases which furnish a constant problem for prison authorities.

MORTALITY OF INFLUENZA IN MASSACHUSETTS.—According to the most reliable data obtainable by the State Department of Health there were about 15,000 deaths in Massachusetts as a result of the influenza epidemic. In all there were about 300,000 cases of influenza and pneumonia.

Although the exact figures are not obtainable at present, the estimates are made on the most reliable information at hand. The number of cases will not be known, as influenza was not a reportable disease by the Health Department until October 14. Returns of all deaths in the State are made by cities and towns to the Secretary of State, but it will be several months before those figures are available. It is stated unofficially that at present about 500 cases of influenza are being reported daily to the State Health Department. When the epidemic was at its height, 7000 were reported every day.

At the Wentworth Institute, Boston, no additional influenza cases have been reported recently from the student body. No cases have developed at any other station, fort or school in this vicinity.

In Brockton, 50 new cases of influenza were reported to the Board of Health on December 7, as compared with 78 cases the day before. The epidemic is serious, but the health authorities are not alarmed, as they feel that it will be held in check by the local physicians without outside aid. The nursing problem is causing some concern. Two trained nurses have been sent to Brockton by the State Board of Health to assist the local nurses.

In Whitman, there were 507 cases of influenza and 27 of pneumonia reported to the Board of Health for the week preceding December 8, when 36 new cases were reported. At a meeting of the Board of Health it was voted advisable to close the schools and forbid public gatherings. Two nurses have been secured to assist the Visiting Nurse Association and attempts are being made to secure additional nurses.

In Boston and vicinity there has been a slight increase in the number of new cases. On December 8, 56 cases of influenza and 1 death were reported, together with 9 new cases of lobar pneumonia and 7 deaths from this cause. On December 9, there were reported 46 new cases of influenza with 6 deaths and 1 new case of lobar pneumonia.

About 125 cases of influenza have been reported to the Randolph Board of Health recently, and while a majority of the cases are mild many cases of pneumonia have developed. The schools may be closed and public gatherings forbidden at any time until the epidemic is under control.

On December 10, 29 new cases of influenza were reported in Waltham.

HARVARD UNIVERSITY MEDICAL SCHOOL.—A meeting for the award of honors to students of medicine was held in the amphitheatre of the Administration Building, Harvard University, on Monday evening, December 16, at 8.15 o'clock.

President Lowell was present and an address was delivered by Dr. Graham Lusk. Dean Edsall presented the diplomas to students of the first rank in the second, third and fourth classes.

Following the meeting an informal reception was given by the Students' Association.

WOMAN PHYSICIANS AT LONG ISLAND HOSPITAL.—For the first time in the history of the Long Island Hospital, a woman has been appointed acting resident physician. Dr. Anna E. Steffen will succeed Dr. L. H. Rockwell. Dr. Rockwell entered the war service some months ago, and has been assigned to Fort Oglethorpe, Georgia. Dr. Steffen has been house officer since January. She is a graduate of Tufts medical school, class of 1913.

Miss Mary A. Morris has been appointed superintendent of nurses at Long Island Hospital.

The Problem of Feeble-Mindedness.—At the opening of the fiftieth session of the Massachusetts Conference of Charities in Springfield on December 5, the importance of taking measures to prevent the spread of feeble-mindedness was urged by the delegates, who believe that this is one of the most important of the social reconstruction problems.

Among the speakers were Dr. Walter E. Fernald, superintendent of the State School for Feeble-Minded at Waverley; Dr. George M. Kline, chairman of the Commission on Mental Diseases; Miss Amy Woods, general secretary of the League for Preventive Work, and Edward M. Hartman, secretary of the Massachusetts Civic League.

Increase in Influenza Cases.—A Recent report to the Health Department for a period of twenty-four hours includes forty-one new cases of influenza and two of lobar pneumonia. Twelve deaths have been reported. This number shows an increase in the number of cases.

At Wentworth Institute, Boston, twelve cases have developed recently among the members of the Students' Army Training Corps and technical training detachments. The patients have been sent to the Fort Banks Hospital, Winthrop. The fact that the men are demobilizing will make unusual precautions necessary.

On December 5, thirty-five new influenza and six pneumonia cases were reported for a twenty-four hour period. This figure is lower than for the preceding day. Four deaths from influenza and four of pneumonia have occurred in this time. Health Commissioner Woodward has expressed the belief that this fluctuation will continue for several days.

Influenza.—Influenza and pneumonia caused 91,386 deaths in forty-five large American cities between September 14 and November 23. Boston stands fourth in the list with 3,481 deaths due to influenza and 975 to pneumonia.

Massachusetts figures include: Cambridge, 387 influenza and 110 pneumonia; Fall River, 620 influenza and 82 pneumonia; Lowell, 151 influenza and 381 pneumonia; Worcester, 633 influenza and 257 pneumonia.

Eighteen new cases, with but two deaths, of influenza and pneumonia, were reported to the Health Department on November 29 for the twenty-four preceding hours. These figures are lower than for several days. Several new cases have developed among army men.

In Holliston, Massachusetts, the public schools have been closed because of influenza. There are many cases in Framingham.

Obituaries.

JAMES JACKSON PUTNAM, M.D.

Dr. James Jackson Putnam, for nearly fifty years identified with neurology in Boston, his native city, died suddenly November 4, at his home, of angina pectoris.

It is not within the limit of this notice to give in detail the events of his peculiarly energetic life nor anything like a complete list of his accomplishments in the diversified fields of his activities. The outstanding facts may be summarized inadequately as follows: Born in Boston, October 3, 1846, the son of Charles Gideon and Elizabeth Cabot (Jackson) Putnam, he had as his heritage the best traditions of a distinguished ancestry. His paternal grandfather, Samuel Putnam, of the Harvard class of 1787, was for many years Judge of the Supreme Court of Massachusetts. His father was a physician of distinction and his mother was a daughter of Dr. James Jackson, one of the most notable figures of his day in American medicine, an appreciative memoir of whom Dr. Putnam published in 1905.

Dr. Putnam was graduated at Harvard College in the class of 1866 at the early age of 20, already a student of high promise. Following his graduation from the Harvard Medical School he became a house-pupil at the Massachusetts General Hospital and thereafter continued his medical education in Leipsig and Vienna under the instruction of Rokitansky and Meynert. He also visited Paris, and later England, where he came into intimate relations with Huylings Jackson, for whom he had always the warmest admiration.

With this equipment and with the enthusiasm of a pioneer in a hitherto largely neglected branch of medicine, he forthwith became identified with study of the nervous system, both

in its normal and pathological relations. He was appointed a lecturer on nervous diseases at the Harvard Medical School in 1872, and established the neurological clinic at the Massachusetts General Hospital. In 1893, his long years of teaching and devotion to his chosen subject were rewarded by his appointment as first Professor of Diseases of the Nervous System at the Harvard Medical School. In this capacity he served until 1912, when he was retired by reason of age and made Professor Emeritus.

Dr. Putnam was one of the charter members of the American Neurological Association and was the last survivor for some years of the group of men who founded the society in 1874. He was also a member of the American Academy of Arts and Sciences, of the Association of American Physicians, the American Medical Association, the American Association of Pathologists and Bacteriologists, the American Psychopathological and Psychoanalytical Associations and many State societies, and took frequent part in their meetings and discussions. From its beginning he was a particularly active member of the Boston Society of Psychiatry and Neurology and was one of the leaders in its deliberations. At the last meeting of the Massachusetts Medical Benevolent Society, held a few days before his death, he was made one of its trustees. His eagerness to serve was exemplified in his unwavering interest in social and civic organizations:—the Associated Charities, especially of late, its committee on the alcoholic problem, and the social service movement, to all of which he gave much time and thought.

To estimate at anything like its true significance the life of such a man is, indeed, a difficult task. Possibly our purpose may best be served by an effort to appraise some of his more conspicuous activities.

To be a leader in an untried field demands exceptional qualifications. When he returned from Europe to this country in the early seventies, he had the conviction firmly fixed that the time had come for America to do her part toward developing the practical study of the nervous system. He had few sympathizers and fewer followers, but to a man of his type this was a stimulant rather than a deterrent, and he forthwith started the neurological clinic at the Massachusetts General Hospital, to which was assigned one small room, and began to teach and to investigate. By degrees the clinic grew, an occasional assistant appeared, and a department which has since attained goodly proportions was permanently established. To a man of less persistence and determination the difficulties would have seemed too great and the road too hard. He lived to see this department of the hospital work, so humbly inaugurated, transferred finally to its present adequate quarters with an increasingly large staff, but his ardent hope that sufficient beds to serve as a complement to the out-patient department be provided has not yet been realized. It would be a fitting and appropriate memorial could such a service be provided. In spite of this serious handicap, the years of his association with the hospital were productive of work and investigation of extraordinary thoroughness and originality. During these earlier years, in lieu of other facilities, he maintained a neuropathological laboratory in his house, the forerunner of the present Department of Neuropathology at the Harvard Medical School. In this laboratory was done much of his pioneer pathological work.

As a teacher of elementary students he was perhaps not so successful as in his other activities. The subject was considered difficult, it was optional, and the average student looked askance at the extra work it entailed. The very profundity of the teacher's knowledge stood in the way of its transmission to the somewhat unwilling student of the earlier days. A certain difficulty in clear exposition of fundamental principles, induced by a conscientious desire to state all the facts of a complex subject rendered his clinical lectures often hard to follow. To the more advanced student this very thoroughness was a decided help and inspiration; as a teacher of those already somewhat conversant with the subject he succeeded in imparting his really extraordinary knowledge more satisfactorily than to the novice.

Dr. Putnam was a master of good English. He wrote extensively and always with painstaking care. His published work of approximately one hundred titles covered a wide range of topics, to all of which he brought originality of thought and expression. Among the most notable of his earlier contributions were an investigation on lead and arsenic poisoning, a study of paresthesia of the hands and a paper on "A Group of Cases of System Sclerosis of the Spinal Cord." The two latter papers, published respectively in 1880 and 1891, were pioneer contributions of great significance which, owing presumably to the somewhat in-

volved wording of their titles and consequent difficulty in indexing, have not received the full recognition which is their due. In 1898, he published papers on internal secretions and splanchnoptosis and again he anticipated our more recent views in an article on the "Psychical Treatment of Neurasthenia." His first interest was mainly with the problems of organic neurology, but during his later years his attention was turned rather toward the functional aspects of nervous disease, an interest which was greatly intensified by the advent of the psychoanalytic movement. The practical application of psychological methods to the problem of behavior in the large sense, as elaborated by Freud and his followers, made an immediate and insistent appeal, and thereafter up to the time of his death he was constantly at work in the attempt to elucidate the deeper significance of the mental life on the basis of the psychoanalytic method. During this period many papers appeared from his pen; his mind was never more active and he bore for the most part with equanimity, but with an occasional burst of indignation the cynical and often abusive criticism aimed not so much at him personally as at the principles in which he believed. It is not to be questioned that when the heat of discussion over the newer psychological theories has subsided his thoughtful and searching papers will come to be regarded as contributions of permanent value in relation to this turbulent phase of medical research. Antedating somewhat this more recent and polemic period his Shattuck lecture before The Massachusetts Medical Society, delivered in 1899, with the original and suggestive title, "Not the Disease Only, but also the Man," revealed in striking fashion his catholicity of view, his belief in the significance of the mental life in the consideration of disease and his conception of the physician's duty toward himself and toward his patient—a masterpiece of expository writing.

His natural mental tendencies led him early toward philosophical inquiry. He was a close personal friend of the late Professors James and Royce and followed eagerly the recent philosophical movement as represented by Bergsen. His constant attempt during the later years was to bring into accord fundamental philosophical conceptions and the practical affairs of life. He believed that the psychoanalytic movement might help toward this end in spite of its incompleteness in that it failed to correlate the ultimate spiritual demand with the practical details of individual experience, and much of his later writing, as, for example, his book on "Human Motives," was concerned with the endeavor to bridge this gap. Dr. Putnam combined in unusual degree the mental qualities of the man of science and the philosopher. "Physics," he said, "can come to its rights only through metaphysics."

Always keenly alive to the misfortunes of others it was natural that he should have become one of the prime movers in the medical social service movement. From its inception he identified himself with its interests at the Massachusetts General Hospital, served on its committees and through example and in more material ways advanced the cause in which he ardently believed. In this, as in all other good causes, he took his part with a modesty and self-abnegation which was a constant source of marvel to those who knew of his manifold activities. Like his late brother, Dr. Charles P. Putnam, and other members of his family, he was a force for good in the community which was the stronger because exerted in ways which avoided publicity and popular recognition. His mind was always open to new ideas; he was almost childlike in his eagerness to see new light on old problems and to the very end he progressed and expanded. His liberality of thought was altogether admirable. With strong conviction on many subjects, he was peculiarly tolerant of the opinions of others and always willing to absorb and incorporate with enthusiasm into his own theories the conclusions of his fellow workers.

His really extraordinary modesty which in another might have appeared almost an affectation, made him a charming and stimulating companion. His understanding sympathy with human difficulties and weaknesses brought to him many, who were not patients, for advice and admonition. How many he helped over hard places can never be known, but his death, while at the height of his activities, leaves behind the memory of a man indefatigable in good works which knew no abatement even in the physical suffering of his last year.

With his interest in the more serious affairs of life went an unusual capacity for the simpler pleasures. His Adirondack camp, which he shared for years with his friend, the late Dr. Henry P. Bowditch, was a perennial source of interest, where from time to time he entertained

many notable persons. He was accustomed always to spend the month of September in this Adirondack camp, even after establishing his summer house at Cotuit, on Cape Cod, where he sailed his boat and worked in his garden with unvarying enthusiasm. He found it difficult, however, even in these periods of recreation, wholly to lay aside the problems which were always pressing for solution, as attested by the book or article he carried with him and his tendency always to turn conversation into serious and profitable channels. The war, happily ended a few days after his death, was to him a matter of almost personal sorrow; his attitude toward it was characteristic; it was as if he felt himself in some way personally responsible for the misdeeds of his fellow-men and suffered accordingly.

In many ways Dr. Putnam was in advance of his time. To such men adequate recognition, not alway accorded in life, is sure to come in increasing degree as the years lend just perspective to our view. It cannot be doubted that such will be the case with him. He lived through a period of medical and social unrest and did his full share towards the establishment of the new order, combining, as few men have, a wholehearted and impartial devotion to his family, to his friends, to his profession and to the community.

SAMUEL ABBOTT GREEN, M.D.

THE death of Dr. Samuel A. Green at the Hotel Lenox, Boston, on December 5, will be mourned by many. He was born in Groton on March 16, 1830, and was the son of Dr. Joshua Green and Eliza (Lawrence) Green. He prepared for college at Groton Academy and graduated from Harvard University in 1851. Having decided on a medical career, he entered the office of Dr. J. Mason Warren, later attended a course of lectures at Jefferson Medical College, Philadelphia, in 1851 and 1852, and then came back to Boston for study at the Harvard Medical School, from which he was graduated in 1854. Dr. Green then went to Paris to continue his medical study, and in 1854-55 he returned to Boston to practise. It was on May 19, 1858, that he was commissioned surgeon of the Second Massachusetts Militia Regiment by Governor Banks. On the breaking out of the Civil War he entered the service as assistant surgeon of the First Massachusetts Regiment, and bore the distinction of being the first medical officer of the State to be mustered into the three years' service. He was surgeon of the Twenty-fourth Massachusetts Regiment from September 2, 1861, to November 2, 1864, and had charge of the hospital ship *Recruit* in General Burnside's expedition to North Carolina, and later of the hospital steamer *Cosmopolitan* on the coast of South Carolina. He was chief medical officer at Morris Island during the siege of Fort Wagner in the summer of 1863, and was post surgeon at St. Augustine, Fla., in October, 1863, and at Jacksonville in March, 1864. He was with the army at the capture of Bermuda Hundred in May, 1864, and was acting staff surgeon in Richmond for three months following the surrender of that city in April, 1865.

It was in 1864 that he was breveted lieutenant colonel for "gallant and distinguished services in the field."

Dr. Green organized a cemetery on Roanoke Island, one of the first regular burial places for Union soldiers during the war.

For six years after the war, Dr. Green held the position of superintendent of the Boston Dispensary. He was then appointed city physician, and during eleven years, the performance of these duties endeared him to thousands by his tender devotion to the poor and the unfortunate.

Dr. Green's interest in city affairs led to his election as mayor. He discharged the duties of his position worthily, and though the remainder of his life was devoted to his profession and to literature, he never lost his interest in public affairs.

During his life Dr. Green held many positions of trust and was a member of numerous societies. He served as a member of the School Board in 1860-62 and in 1866-72, as trustee of the Boston Public Library in 1868-78, and as acting librarian in 1877. He was a fellow of the Massachusetts Medical Society, a member of the Boston Society for Medical Observation, of the Boston Society for Medical Improvement, of the American Philosophical Society of Philadelphia, of the State Board of Health, Lunacy and Charity, president of the Channing Home for Consumptives, overseer of Harvard University; trustee, secretary and general agent of the Peabody Education Fund, a member of

the Board of Commissioners to investigate the condition of the records, files, papers and documents in the State Department of Massachusetts, editor of the *American Journal of Numismatics*, and president of the American Numismatic Society. In 1896 the honorary degree of LL.D. was conferred upon him by the University of Nashville, Tenn.

Although his life was filled with innumerable interests and activities, Dr. Green found time to write many books and pamphlets, among which are the following publications:

"My campaign in America," a journal kept by Count William de Deux-Ponts, 1780-81, translated from the French M.S., with an introduction and notes; "The Story of a Famous Book," an account of Dr. Benjamin Franklin's autobiography; "School Histories and Some Errors in Them," "Epitaphs from the Old Burying Ground in Groton," "Early Records of Groton, 1662-1678," "History of Medicine in Massachusetts," "Groton During the Indian Wars," "Groton During the Witchcraft Times," "Boundary Lines of Old Groton," "The Geography of Groton," prepared for the use of the Appalachian Mountain Club; "Groton Historical Series," three volumes; "An Account of the Physicians and Dentists of Groton," also "An Account of the Lawyers of Groton," "The Career of Benjamin Franklin," a paper read before the American Philosophical Society, Philadelphia, May 25, 1893, on the 150th anniversary of its foundation; and "An Address Before the Old Residents' Historical Association of Lowell," also an account of the library of the Massachusetts Historical Society. "An Historical Sketch of Groton, 1655-1890," and a "List of the Early American Imprints" in the library of that society.

The funeral services for Dr Green were conducted in the Old South Church. Reverend George A. Gordon, D.D., pastor of the Old South Church, conducted the services. Many prominent men and representatives of many of the societies to which Dr. Green belonged during his long career of usefulness attended the services. He was buried in his native town, Groton, where burial services were held in the First Parish Church.

Dr. Green's life was characterized by diversity of endeavor and fulness of achievement. His tastes were simple. For many years he resided on Harrison avenue, where he won the deserved love and confidence of his foreign neighbors and friends. "No better illustration of the character of the man can be cited than the case of the apple woman who used to have her stand at the old United States Court House at the corner of Temple Place and Tremont street. She had been ordered from her stand at the building, and at whatever place she established herself she could not carry the trade she had had. To Dr. Green she told her story.

To secure her old stand Dr. Green got the endorsement of Assistant United States Treasurer Kennard, United States District Attorney Sanger and the United States Marshal Banks. The petition was forwarded to the Secretary of the Treasury at Washington, with a personal letter from Dr. Green. The woman was allowed to return to her old stand."

An editorial appreciation of Dr. Green in the *Transcript* says:

"Dr. Samuel A. Green was of the most admirable type of the real Bostonian—solid in his attainments, conscientious and public spirited in the performance of every public duty and in the maintenance of the civic interest, polished in education, affectionate in his thought toward his native town and the city of his residence—the 'conscript father' in the old and best sense."

Miscellany.

IN MEMORIAM.

WILLIAM HENRY BUFFUM, A.B., M.D.

Lieutenant, Senior Grade, U.S.N.

Aesculapian Club, Chapter 1902.

WILLIAM HENRY BUFFUM was born in Providence, R. I., June 25, 1877. He attended Brown University, graduating with the class of 1898. He was a member of the class of 1902 in the Harvard Medical School, from which he graduated with honors. He was one of the charter members of the Aesculapian Club in the Chapter of 1902. After a medical house officership at the Massachusetts General Hospital on the service of Drs. Shattuck and Cutler, he returned to Providence to begin the practice of internal medicine. Later he became much interested in obstetrics and still later in pediatrics. He was a member of the State and National societies and at the Rhode Island Hospital he was chief of the new ward for diseases of infants.

He was also associate visiting physician to the Providence Lying-in Hospital. With the formation of Base Hospital No. 5 of the United States Navy, the members of which were in large part from the staff of the Rhode Island Hospital, he volunteered for service, receiving the rank of Lieutenant, Senior Grade.

Soon after the arrival of this unit overseas, Buffum contracted influenza, which was followed by pneumonia. He died in Liverpool on the 13th of October, 1918.

Earnest, quiet, hard-working, unassuming, each of Buffum's many friends will for long years treasure closely the memory of his sterling character and gain high profit from the splendid example set by his all too short life. We mourn the loss of a good and kindly friend; a genial companion; a loyal son of his two Alma Maters; a true disciple of Aesculapius. For such as he there could be only one answer to the call of his country; and those of us who were so fortunate as to see him shortly before his unit sailed for England, know his pride and thankfulness in the fact that he was able to serve.

"Only those are fit to live who do not fear to die; and none are fit to die who have shrunk from the joy of life and the duty of life.

* * * * * * * * *

These are the torch bearers, these are they who have dared the Great Adventure."

HARRISON BRIGGS WEBSTER, A.B., M.D.

Major, Medical Corps U. S. Army, A.E.F.

Aesculapian Club, Chapter 1909.

MAJOR HARRISON BRIGGS WEBSTER, M.D., was killed in action in France October 7, 1918. He leaves a wife and three children.

Dr. Webster was born in Boston, January 26, 1884. He graduated from Noble and Greenough School, entering Harvard in the class of 1905. He was prominent in rowing, as well as in all class activities, being a Class Day officer. After graduating from college, he entered the Harvard Medical School, receiving his diploma *cum laude* in 1909. He then became surgical house officer at the Massachusetts General Hospital. After finishing his interneship, he went to assist Dr. Grenfell, in Labrador. Returning in two years, he settled in Castine, Me., where he practised until war was declared.

One of the first to enlist, he started at the bottom and rapidly rose in rank, as his sterling qualities were recognized, until at the time of his death, he was Major, acting as regimental surgeon of the 47th infantry. Judging from his letters, he was in the thick of the fighting in several engagements, and all who knew him, knew that he was taking no heed for his own safety when help was needed.

"Buntie" was a lovable and jovial companion at all times. In all his work he combined unusual surgical skill and fine judgment.

According to the meagre accounts obtainable, he was killed by a shell while helping extricate an ambulance loaded with wounded, which was caught in a mud hole. He died doing heroic work for others, as he would have wished to die. Those of us who knew "Buntie" will mourn a true friend and a brave comrade.

Correspondence.

CARLYLE'S DESCRIPTION OF INFLUENZA IN 1837.

31 Massachusetts Ave., Boston, Mass.
December 8, 1918.

Mr. Editor:—

The following description of the influenza epidemic in London is from a letter written by Carlyle to his younger sister, Mrs. Hanning, who lived in Manchester.

The letter was written in January, 1837.

"All people have got a thing they call Influenza, a dirty, feverish kind of cold; very miserable, and so general as was hardly ever seen. Printing offices, Manufactories, Tailor shops, and such like are struck silent, every second man lying *sniftering* in his respective place of abode. The same seems to be the rule in the North, too.

"I suppose the miserable temperate of climate may be the cause. Worse weather never fell from the Lift, to my judgment, than we have here. Reek, mist, cold, wet; the day before yesterday there was one of our completest London fogs,—a thing of which I suppose, you even at Manchester can form no kind of notion."

Very truly yours,
WM. PEARCE COUES, M.D.

SOCIETY NOTICE.

THE NORFOLK DISTRICT MEDICAL SOCIETY.—A regular meeting of the Society will be held in the Roxbury Masonic Temple, 171 Warren St., December 31, at 8.00 p.m.

Communications: The Conservation of Industrial Man-Power Through the Standardized Methods of the Life Extension Institute, Martin Edwards, M.D.; The Care of the Workers of the Thomas G. Plant Company, Marion H. Lewis, M.D.; Value of an Industrial First Aid Department, Matthew Porofsky; What Industrial Work Means to Me, Louise Monroe; A Few Words Regarding the Emergency Work of the Industrial Plants of Ward Twenty-four, Charles F. Stack, M.D.

BRADFORD KENT, M.D., *Secretary.*

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MEDICINE.

THE PRIMARY CAUSE OF SHOCK.

TWICH, F. B. (*Med. Rec.*, June 1, 1918) finds that the opinion among investigators is gaining ground that the symptoms of shock are due more to the result of the absorption of some poison liberated in the body as a result of injury than to any distinctly nervous affection. He cites a considerable series of varied animal experiments to confirm his theories. These are interesting and suggestive. The author finds that shock produced by wounds, burns, exposure to handling of viscera, artificial "shell shock," etc., all seem to result in one and the same condition, namely, rapid autolysis of the injured cells, the products of such autolysis causing the classical symptoms of shock and death. He suggests as one of the most efficient methods of treatment the application of continued heat to the splanchnic area of the abdomen by hot water bottles or electric pads, and the early excision of injured tissue. [E. H. R.]

SENSITIZED VACCINES IN THE PROPHYLAXIS AND TREATMENT OF INFECTIONS.

CECIL, R. L. (*Am. Jour. Med. Sci.*, June, 1918) finds that evidence in favor of the sensitized vaccine is not sufficient to justify its substitution for the ordinary vaccines in infections. The sensitized vaccine at times, however, has the advantage that larger doses can be employed, and the use of these vaccines may often be efficient when there is a hypersensitiveness to the ordinary vaccine. The increased labor and time consumed in their preparation is a factor against their common use. [E. H. R.]

SURGERY.

GUNSHOT INJURIES OF THE LUNGS.

EGGERS, CAPT. C. (*Surgery, Gynecology and Obstetrics*, June, 1918) writes an interesting clinical analysis of a series of 30 cases under his observation and concludes that conservative treatment is generally more productive of good results than radical. He groups cases and their treatment as follows: Perforating gunshot wounds of the thorax and lungs, with a closed pneumothorax or without one, should be treated conservatively. Hemothorax producing alarming symptoms of compression should be aspirated early, removing just enough fluid at first to relieve symptoms.

Hemothorax running a normal course, but showing no or little tendency to absorption, should be aspirated to prevent the formation of a thickened pleura, contraction of lung, etc. An infected hemothorax should either be aspirated at first and later have a rib resection, or, if the symptoms are urgent, the rib resection should be done at once. An open pneumothorax with a small external opening should be closed by suture, if the wound is clean; otherwise, by a firm dressing or tampon. An open pneumothorax with a large opening should promptly be treated

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surgically. If only the thoracic wall is injured the wound edges should be excised and the lung sutured into this window. In case the lung also has been perforated, this wound should likewise be excised and sutured and this portion of the lung then fastened into the thoracic window. In order to do these operations satisfactorily it is advisable to have a simple positive pressure apparatus at hand. [E. H. R.]

Is Purgation of Patients before Operation Justified?

ALVAREZ, W. C. (*Surg., Gyn. and Obst.*, June, 1918) answers this question, from experimental and clinical data, in the negative. He believes that the fear of autointoxication, so often given as the reason for preoperative purgation, is an absolutely unfounded one. Preoperative purgation does not, as some theoretically suppose, avoid postoperative gas pains. In fact, purgation may cause alarming flatulence and distention. Dehydration of the intestinal tract and an upset of the salt balance are bad practices. With magnesium sulphate there may be an increased amount of fluid in the bowel to disturb those who want it empty. In operations on the colon, liquid contents are harder to control than solid masses. Whether from disturbances in motility, absorption, circulation or in bacterial conditions, there certainly is a greater tendency to distention when purgatives are used. Loss of sleep due to frequent bowel movements the night before operation is distinctly harmful to the patient. Purgation makes the bowel react so poorly to drugs that there may be grave difficulties in meeting postoperative emergencies. All the evidence is in favor of not purging an operative patient.
[E. H. R.]

Perforated Gastric and Duodenal Ulcer. A Statistical Report of Fifty-nine Cases.

SCULLY, F. J. (*Am. Jour. Med. Sci.*, June, 1918) writes a very interesting clinical analysis of his series of cases, and brings out several important points, especially in diagnosis. He finds that no definite determining cause for perforation can be named. Seven cases perforated during heavy work. In the majority of cases, perforation occurred from 6 to 10 hours after eating, so that the entrance of food into the stomach did not seem to be a determining factor. One very important point brought out is the following: In most cases of perforation, immediately following the sudden onset of pain, there is a period of remission, coming on from two to three hours after the perforation. The acute symptoms and signs abate and the patient looks and feels better. The physician called in at this time may not recognize the seriousness of the condition and delay sending the patient to the hospital for operation. The recurrence of pain indicates the onset of peritonitis. Three stages are recognized: (1) stage of shock and collapse, (2) stage of reaction, and (3) stage of diffuse peritonitis. In the majority of cases seen early the point of acutest tenderness corresponds to the point of greatest pain. In late cases the tenderness is generalized. In cases recovering, the pulse is never as rapid as in those which result fatally. Conditions with which perforation are most often confused are, in the early stage, acute appendicitis, acute cholecystitis and acute pancreatitis: and in the late stages, ruptured appendix and general peritonitis from an unrecognized source. Methylene blue may be given by mouth previous to operation in doubtful cases, and its discovery in the peritoneal cavity will make the diagnosis of perforation. In gastric cases perforation is more liable to be anterior—as also in duodenal cases. The fact that cases operated on after twenty-four hours do recover is due to the localization of the infection. The article is full of clinical meat. [E.H.R.]

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MEDICINE.

SYMPTOMS WHICH PRECEDE AND ARE ASSOCIATED WITH GENERAL ARTERIOSCLEROSIS.

O. K. WILLIAMSON (*The Lancet*, May 4, 1918), in an interesting way, discusses the general subject of arteriosclerosis and its various manifestations. He first takes up the pathogenesis of hyperpietic arteriosclerosis. He then discusses the symptoms of high blood pressure, or hyperpiesis. Then he takes up the various symptoms associated with arteriosclerosis. [J. B. H.]

THE RESULTS OF TREATMENT IN PERNICIOUS ANEMIA.

BLOOMFIELD (*Bulletin of the Johns Hopkins Hospital*, May, 1918) discusses the results of treatment in pernicious anemia, and summarizes his conclusions as follows:

1. No definite evidence has been found that either transfusion, splenectomy, or elimination of foci of infection prolongs the life of patients suffering from pernicious anemia.
2. Transfusion performed at a time when the patient was not refractory brought on remission in about half the cases, and enabled the blood count to be raised to a higher level than it reaches in cases not so treated.
3. Such artificial plethoras did not increase the duration of the remission, although the patients usually had a sense of well-being while the count was high.
4. At other times the same patients were refractory to transfusion as well as to other methods of treatment.
5. The central nervous system symptoms were as little benefited by transfusion and splenectomy as by other methods of therapy.
6. Transfusions of blood were not "held" better after splenectomy than before. [J. B. H.]

TOBACCO SMOKE AND PULMONARY TUBERCULOSIS.

KRAUSE (*Bulletin of The Johns Hopkins Hospital*, May, 1918), in an article based on a previous paper by Major Gerald B. Webb on "The Effect of the Inhalation of Cigarette Smoke on the Lungs," discusses this subject.

"In the tobacco smoke inhaler there is a comparatively mild irritation, repeated often over a long period. This is apt to result in a chronic low-grade inflammation. Everything else being equal, its net effects on tuberculosis that is otherwise well taken care of should be mildly stimulating and tending to repair; not violently upsetting, as may occur from a lobar pneumonia in the area surrounding tuberculosis."

Thus Krause apparently concludes that the tobacco smoke, except in rare instances in cases of advanced active disease, is not particularly harmful to the average tuberculous process of the lungs. [J. B. H.]

CHEMOTHERAPY IN PNEUMONIA.

MATTHEW (*Edinburgh Medical Journal*, April, 1918) discusses the treatment of pneumonia with

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certain synthetic drugs, particularly quinine and its derivatives, and presents briefly 24 cases. He concludes that:

1. In quinine urea we have a definite treatment of pneumonia as opposed to the usual expectant method.
2. Cases of pneumonia with marked toxemia are afforded a much better chance of recovery.
3. In all cases its administration makes the patient much more comfortable—allows of natural sleep, and the disease produces less strain on the heart and constitution. [J. B. H.]

PRESENT-DAY OUTLOOK ON TUBERCULOSIS.

PHILIP (*Edinburgh Medical Journal*, May, 1918), in his inaugural address, delivered on the institution of the chair of tuberculosis in the University of Edinburgh, in April, 1918, discusses the general status of our tuberculosis campaign, the changes that it is undergoing, and the outlook for the future. It is not an article that lends itself to reviewing, but one that is very much worth reading by all interested in this subject. [J. B. H.]

SURGERY.

THE PREVENTION AND TREATMENT OF HEMORRHAGE IN ENUCLEATION OF TONSILS.

HILL (*The Practitioner*, April, 1918) discusses the occurrence of hemorrhage in tonsillectomy, its prevention and treatment. There are numerous diagrams in this long and elaborate article. His conclusions are as follows:

1. Serious hemorrhage is rare in connection with tonsil operations, but when it does occur it may be a very grave complication.
2. Careful selection is advisable before removing tonsils, even in apparently healthy children, and even though the number of cases which had better be excluded, or else dealt with in a special manner, is admittedly both relatively and actually small—probably not 1 in 1000.
3. Prophylactic treatment is useful in "bleeders" and in anemic subjects.
4. Hemostatic methods of enucleation demand both experience and skill on the part of the operator and anesthetist, and a fairly prolonged and deep anesthesia is usually necessary. Open ether, preceded by a hypodermic injection of atropine, is the safest combination for deep anesthesia.
5. Hemostatic methods that insure dry tonsillar beds at the termination of the operation, provide the most reliable prophylaxis as regards hemorrhage, whether early or remote.
6. Skillfully applied pressure can be relied upon to arrest most forms of tonsillar hemorrhage, whether primary or secondary.
7. Failing relief by pressure, single or multiple ligaturing of bleeding points is nearly always effectual.
8. Suturing the pillars, either by means of Michel's hooks or by Irwin Moore's highly ingenious and practicable technic, is a sure temporary measure in those rare intractable cases in which separate ligaturing, skillfully carried out, fails.
9. Styptic topical applications and hypodermic medication are usually unreliable expedients.

[J. B. H.]

HEMORRHAGE FOLLOWING REMOVAL OF THE TONSILS AND ITS TREATMENT.

MOORE (*The Practitioner*, April, 1918) discusses this subject at great length and in great detail, with an elaborate list of references. In treatment he takes up the use of calcium lactate, adrenalin, pituitrin, and sero-therapy. [J. B. H.]

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MILITARY MEDICINE.

ARMY NEPHRITIS.

COOMBS, C. F. (*The Lancet*, April 6, 1918) believes that army nephritis is of infectious origin. The exact source of infection and its nature he proceeds to discuss in detail. He believes that the disease is due to the passage of micro-organisms or their toxins, or both, through the systematic circulation into a kidney which has been "sensitized" by the trying conditions of military service, especially in men over 40. He discusses diagnosis and prognosis. There was a mortality of 3.75% out of 160 of his cases. The treatment of these was that of acute nephritis.
[J. B. H.]

A STUDY OF THE CARDIAC DISABILITIES OF SOLDIERS IN FRANCE.

HUME, W. E. (*The Lancet*, April 13, 1918) discusses the results of an inquiry into the cardiac and circulatory conditions of 5000 soldiers who have been sent to a base hospital with a diagnosis of valvular disease of the heart, and disorderd action of the heart.

He eliminated 8.3% of these patients at once, as they were not suffering from any circulatory disease. He discusses the various pathological conditions found in the remainder, and presents his results in tabular form. The symptoms shown are shortness of breath, pain in the region of the heart, palpitation, and giddiness, which occur under varying states of the body and mind. He is unable to assign a definite pathological basis to the majority of cases.

There is no single underlying cause to account for the occurrence of the symptom-group entitled D. A. H. (disordered action of the heart) or the soldier's heart. There are three groups in this class of patients: First, those who throughout life have been unable to undertake physical exertion of any sort. The majority of these, no matter how strict their training, are never fit for great or prolonged physical exertion. Second, there is a group of patients who owe their disability to permanent or temporary damage to a heart muscle. Third, there are those with tachycardia following shell shock, in whom the fault lies in a nervous innervation of the heart rather than in the heart muscle itself.

Good food, undisturbed sleep and out-door exercise, regulated and under discipline, are the sole factors necessary for the improvement of all types. By this method fifty to sixty per cent. can be sent back to their original work after four to five weeks. The remaining forty to fifty per cent. prove unable to undertake any kind of work or hardship. [J. B. H.]

MILITARY SURGERY.

ON BONE-GRAFTING IN GUNSHOT INJURIES OF THE MANDIBLE.

PLATT, CAMPION and RODWAY (*The Lancet*, March 30, 1918) discuss the use of bone-grafting in gunshot wounds of the jaw, with numerous illustrations, with the following conclusions:

From such a small series of cases at the present stage no generalizations can be enunciated. The functional results in our cases have been such as to warrant the future employment of the operation of bone-grafting in suitable cases. The exact technic can only be standardized after a study of the remote results in a larger series of operations. The double function of the graft, mechanical and physiological, is well demonstrated in the series of radiograms accompanying this article. We present this series of bone-graft operations as a personal experience, without any comment on the contemporary literature, which is already voluminous. [J. B. H.]

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MEDICINE.

THE EFFECT OF FORCED FEEDING ON THE NITROGEN EQUILIBRIUM AND THE BLOOD IN PERNICIOUS ANEMIA.

MOSENTHAL (*Bulletin of The Johns Hopkins Hospital*, June, 1918) reports on a study of three cases of pernicious enemia put on forced feeding for about one month and studied to determine as to whether or not, first, there was an assimilation of protein by the body or, in other words, a positive nitrogen balance, and, second, as to whether or not the red blood cells and the hemoglobin were increased. He discusses the literature on the work that has previously been done on this subject and gives the details for his three cases. He concludes that by means of a forced diet a positive nitrogen balance may be readily obtained in pernicious anemia. In each of his three cases there was an improvement in the blood picture. He considers these results to be only suggestive, as too few patients have been studied to warrant a definite conclusion. [J. B. H.]

PULMONARY FIBROSIS, TUBERCULOUS AND NON-TUBERCULOUS.

HERBERT (*The Lancet*, June 1, 1918) discusses pulmonary fibrosis, the tuberculous and non-tuberculous forms, with particular reference to the fibrosis found in children of school age, often diagnosed as tuberculous, without hesitation and without consideration of the possibility of a cause other than tuberculosis. He presents four illustrative cases. Diagnosis depends upon the history and appearance of the patient, the situation of the disease, and the sputum examinations. Non-tuberculous patients almost always give a history of bronchial pneumonia often following measles or whooping-cough. There is a history of persistent and progressive cough for rarely more than a year. Tuberculosis is apt to be ingrafted on top of these non-tuberculous infections. These processes are generally situated at the base of the lung; situated at the apex, it would usually indicate tuberculosis. It would appear that what the writer chooses to call non-tuberculous pulmonary fibrosis, in this country would be called bronchiectasis or chronic non-tuberculous pulmonary infection. [J. B. H.]

MILITARY MEDICINE.

THE ETIOLOGY AND TREATMENT OF "TRENCH FOOT."

SWEET, NORRIS and WILMER (*The Lancet*, April 20, 1918) discuss the evidence showing that "trench foot" is a vasomotor disturbance to be attributed to a spasmodic contraction of the arterioles of the foot. They present the results of 53 cases in tabular form. They found that potassium iodide gave more relief than any other drug. The only other method used in these cases has been hot-water bottles to the soles boric powder dusted on the feet, and flannel bandages. [J. B. H.]

SEPTIC PHLEBITIS DUE TO GUNSHOT WOUNDS.

BURROWS, H. (*The Lancet*, April 27, 1918) discusses septic phlebitis due to gunshot wounds, and presents the following conclusions:

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The following propositions may be advanced: (1) That septic phlebitis is a common complication of gunshot wounds; (2) That spontaneous recovery may take place, especially if small veins alone are involved; (3) That septic phlebitis is often difficult to recognize during life; (4) That if its presence be overlooked, fatal complications are likely to ensue; (5) That timely surgical interference is attended with a good measure of success. [J. B. H.]

NON-UNION OF WAR FRACTURES OF THE MANDIBLE.

COLE, P. P. (*The Lancet*, March 30, 1918) discusses the question of non-union of fractures of the jaw. He describes the various methods, such as plating, wiring, bone-grafts, etc., and summarizes the results as follows:

The results obtained by the operative treatment of non-union must be concisely summarized thus: Thirty cases have been subjected to operation; in two cases the operation has been abandoned as impracticable.

Of the remaining 28 cases, 10 have been operated on too recently to permit of any definite statement as to the results obtained. Of the 18 cases whose fate is known, 13 have been completely successful, 2 have been considerably improved, while the other 3 must be regarded as failures. Thus it will be seen that the percentage of success is over 70. There has been no mortality and post-anesthetic complications have been entirely absent.

The results are such, in a word, as to justify the conclusion that no patient so afflicted should be discharged until operation has not only been offered to, but urged upon him. The functional disability associated with ununited fracture of the mandible is, in the vast majority of cases, an unnecessary disability. It is a blot upon the escutcheon of surgery which we, if we be worthy devotees of the art, must determine to expunge. [J. B. H.]

A CONTRIBUTION TO THE TECHNIC OF INFECTED WOUND CLOSURE, MORE ESPECIALLY, COMPOUND FRACTURES.

GURD (*The Lancet*, May 25, 1918) writes briefly concerning the technic of closing infected wounds. He believes that a more aggressive and direct treatment of infected compound fractures than is commonly employed is indicated. The technics introduced by Morison and Carrel have proved their usefulness in the hospitals in France. In a series of 30 characteristic cases, the author has applied a modification and combination of these methods with gratifying results. He presents the details of his method, based on those of Morison and Carrel. The advantages he claims for his method are as follows:

1. Lessening of discomfort and pain to the patient, as a result of increase in interval between dressings and shortening of open wound period.

2. Improvement in functional result in consequence of (*a*) less frequent disturbance of bone fragments during the dressing stage and the earlier application of complete immobilization in cases in which this is indicated. (*b*) A diminution in the number of adherent painful scars and nutritional disturbances. (*c*) Earlier opportunity for secondary operations, such as nerve and tendon suture and massage, etc.

3. Early transformation of patients from the "dressing" to the "observation" class of men.

4. Shortening of hospital days per patient and consequent increase in the usefulness of hospital beds.

5. Economy of dressing material, both by reason of the infrequency of dressings and by shortening of the dressing period. [J. B. H.]

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MILITARY MEDICINE.

A CONTRIBUTION ON BLOOD TRANSFUSION IN WAR SURGERY.

ROBERTSON (*The Lancet*, June 1, 1918) describes his results in the use of blood transfusion in war surgery. He discusses the advantages and disadvantages of the indirect methods, the indications for blood transfusion, the time for transfusion, the amount of blood to be transfused, the immediate results, the selection of a donor, post-transfusion reactions, and the dangers of hemolysis. Out of 68 cases of primary hemorrhage, life was saved in 36 cases; of nine cases of secondary hemorrhage, six recovered. [J. B. H.]

PHARMACOLOGY, PATHOLOGY AND PHYSIOLOGY.

THE CLINICAL SIGNIFICANCE OF THE IRREGULAR DISTRIBUTION OF VARIOUS CELLS AND PARASITES IN THE BLOOD STREAM AND THE PRODUCTION OF ABORTIVE LEUKEMIC CHANGES AND OF SPLENOMEGALY IN THE MACACUS RHESUS.

SELLARDS AND BAETJER (*Bulletin of the Johns Hopkins Hospital*, June, 1918) presents a laboratory study concerning the significance of the irregular distribution of various cells and parasites in the blood stream and the production of certain leukemic changes and enlargement of the spleen, based on experiments in the monkey. Summary of their work is as follows:

I. The circulation of normal and foreign substances in the blood often fails to follow mechanical laws, either under normal or pathologic conditions. An unequal distribution occurs which is governed by biological conditions. The corpuscles of the blood are not distributed with mechanical uniformity throughout the blood channels; parasites invading the blood stream are often concentrated in the blood spaces of the viscera.

II. Upon injection of a variety of substances into the circulaton, the injected substance and the leucocytes, especially the polymorphonuclears, disappear from the peripheral circulation within a few minutes and collect in the blood vessels of the viscera, principally in the lungs and liver. Within a short time the leucocytes return to the peripheral circulation, often in increased numbers and sometimes having phagocyted the injected material.

III. The leucocyte count cannot be interpreted as an index of absolute change in number of leucocytes

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in the entire body, for it often indicates only changes in distribution rather than a formation or destruction of white cells. Thus, the total white count does not constitute crucial evidence that there is an absolute leucopenia in typhoid fever. There are at least three factors governing the leucocyte count, namely: (1) the infecting organism; (2) the severity of the infection; and (3) the location of the infection in the host.

IV. The failure of foreign substances to be distributed in the blood stream according to mechanical laws has an important bearing on the transmission of infectious diseases. It offers many arguments against intravenous injections of infective material for the transmission of a disease to resistent animals, for the reason that:

1. Considerable dilution of the material necessarily occurs.
2. Extensive opportunity is offered for the action of any deleterious effects which the fluids and cells of the blood may exert.
3. Fine suspensions and limited amounts of material are necessary in order to avoid embolism and sudden death.
4. Finely suspended matter is not distributed equally throughout the blood stream, but a large portion is removed by the lungs.

Many of these objections could, of course, be overcome by the intra-arterial injection if it were made into the proper side of the circulation.

V. Inoculation into the spleen for the transmission of splenomegalies to lower animals possesses certain advantages.

1. It avoids many of the disadvantages of intravenous injection.
2. The injected material can be temporarily protected from the immediate action of the fluids and cells of the body.
3. The mechanical advantage is considerable, since large pieces of material can be used.
4. The spleen is well adapted for study since changes in size in certain animals can be readily determined by palpation.

VI. Inoculation of the spleen of a case of acute leukemia into the spleens of cats produced death acutely. Inoculation from these cats into a spleen of a monkey produced a chronic splenomegaly with an acute temporary leukemic change in the blood picture. The producton of even abortive leukemic changes and of splenomegaly in a normal animal by inoculation of human material is of interest. [J. B. H.]

THE WASSERMANN REACTION: ITS USE AND ABUSE.

BAYLY, H. W. (*The Lancet*, May 4, 1918) discusses the value of the Wassermann reaction, its use and abuse, and presents various illustrative cases. He summarizes his opinion of this method as follows:

A symptom does not become useless for diagnosis because it is not pathognomonic, and it is the sum of various symptoms, none of which may be pathognomonic, that establishes diagnosis. I consider the Wassermann reaction as one of the most valuable symptoms of syphilitic infection that we possess, but that diagnosis cannot be based with certainty on this symptom alone, even if the reaction is strongly positive, and that weak positives are useless for diagnosis. A negative Wassermann is of especial value when lesions of a doubtful nature are present, and render it highly improbable that syphilis is the cause of the lesions. A negative Wassermann of the cerebro-spinal fluid is probably sufficient evidence to exclude G.P.I. A negative reaction also indicates that the treatment given has been efficient, but one or two negatives are no proof of permanency of cure. [J. B. H.]

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MEDICINE.

THE PRESENT POSITION OF THE TREATMENT OF SYPHILIS.

MATSON (*Ind. Med. Gazette*, April, 1918) discusses the present status of the treatment of syphilis. He believes that the most satisfactory solution of the problem is to be found in the intramuscular injection of salvarsan. Trivalent arsenic can in this way be introduced into the organism in such doses as to exert its selective effect without damaging the host. So far, no other chemical compound used in the treatment has been comparable to arseno-amido-phenol and its salts in therapeutic efficiency. The relation of the radicles of arseno-amido-phenol in the phenol ring forms a combination which is destructive to and selective for the spirochetae of syphilis in the same way, and probably to a greater extent, than the quinine grouping to malarial infection. The arsenic groups are of paramount importance in giving protection against the toxic effects of arsenic. Interference with them (the formation of substitution products with their hydrogen atoms) may increase the solubility or stability of the compound, but tends to diminish the therapeutic value. The diminution seems to bear a direct relation to the extent of such interference. The introduction of such metals as aluminum in place of arsenic has so far found only limited application. To insure the effectiveness of the compound the metal must be in close association with an amino-phenol ring, *i. e.*, directly combined with a carbon atom of the ring, not merely as the salt of an amino argi acid. [L. D. C.]

ACUTE NEPHRITIS WITH THE SPIROCHETAE IN THE URINE.

CECCONI (*Policlinico*, pract. sec., Oct. 28, 1917) in the study of epidemic jaundice found ten cases of acute hemorrhagic nephritis, and in one of these he found the spirochetae in the urine. This was in a young soldier who had been in the trenches for some time and who had been sent to the base hospital with all the clinical signs of acute nephritis. Three similar cases were reported, by Solomon and Neveu, to the Société de Biologie, in March, 1917.

The spirochetae seemed to be of the infectious jaundice type, and he thinks it possible to have the spirochetae without jaundice. It is also possible that this soldier may have been a carrier, as there were no other symptoms except the acute nephritis.

[G. M. B.]

THE MECHANICAL FACTOR IN THE TREATMENT OF PULMONARY TUBERCULOSIS.

DAVIES, H. MORRISTON (*Quart. Jour. of Med.*, April, 1918) emphasizes the importance of overcoming the mechanical obstacles to a cure in consumption. These may nullify the most careful hygienic treatment, if not attended to. Cavities will never

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heal if the walls are not brought together, and this is possible only if the lung is allowed to collapse. The simplest way of doing this is by injections of nitrogen into the pleural cavity. This method is too well known to require further discussion here. It is often rendered difficult, however, by the presence of pleural adhesions. Davies describes three methods of dealing with these, as follows: (1) By stretching. Adhesions which are not too dense may be removed by the use of a steady positive pressure of about 10 mm. of mercury over a period of two or three months. To maintain this pressure it is necessary to repeat the injections of nitrogen every eight days. The treatment should be controlled by means of the x-ray. By this method very good results are obtained, so that sometimes double the amount of gas can be injected after the stretching; (2) The second method, that of rupture, is indicated where there are multiple adhesions. The pressure employed should not exceed 20 mm. of mercury. The patient experiences a sensation as if something gave way in the chest; (3) The third method, division of the adhesion, is indicated where the bonds are single or few in number and dense and can be located by the x-ray. The author divides such adhesions, under the guidance of fluoroscopy, by means of a special tenotome.

After the use of one of the above methods, a case which was previously unsuitable for treatment by artificial pneumothorax will often allow of good collapse of the lung. A further complication may occur from dense adhesions of the basal part of the lung to the diaphragm, causing constant irritating cough after the injection of gas. The author has overcome this by section of the phrenic nerve on the corresponding side, thus paralyzing the diaphragm and preventing the pull on the lung with each respiration. This measure also is of benefit in checking secondary bronchiectasis of the lower lobe by reducing traction on the walls of the bronchi, and thus also reduces the amount of secondary infection. The author does not state how long the paralysis persists; after simple section of the nerve regeneration would take place and the paralysis would be but temporary.

As a last resort in cases where extensive adhesions prevent the injection of enough gas to collapse the lung, Davies advises the operation of rib mobilization. Active disease of the other lung and marked evidence of toxemia are contraindications to this operation. [W. T.]

SURGERY.

NON-SURGICAL TREATMENT OF CANCER.

GEYSER (*New York Med. Jour*, Feb. 2, 1918) calls attention to the increasing mortality from cancer in spite of the increased efforts of surgeons to improve their operative technic and in spite of greater pains to make an early diagnosis. He believes that by the time it is possible to make an accurate diagnosis of the presence of malignant disease, it is nearly always too late to expect success with the knife. The methods of treatment which he believes are most important are those in which the destruction is accomplished without opening lymph or blood channels; the method of low heat, such as advocated by Dr. Percy, is one of the most efficient ways. His own preference is the application of the diathermic currents used in such strength as will maintain a temperature of 108° for one hour daily. "Such a temperature in the cancerous mass changes the physiological workings." It may or may not cause a disappearance of the mass, but the patient's condition improves very much. This method, however, is only applicable to those cases where the cancer is within reach. [E. L. Y., Jr.]

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PATHOLOGY, PHYSIOLOGY AND PHARMACOLOGY.

THE PATHOGENESIS OF DIPHTHERITIC PARALYSIS.

WALSHE (*Quart. Jour. Med.*, April, 1918) presents an interesting discussion of the above subject. It has been usually supposed that the paralysis in diphtheria was due to the action of toxin conveyed by the blood current. Babonneix, however, showed that after the subcutaneous inoculation of diphtheria toxin in animals a local paralysis, corresponding to the site of inoculation, preceded the general paralysis, and he drew the conclusion that an ascending infection along the nerve took place similar to that in tetanus and rabies. Later, Orr and Rous demonstrated the existence of an ascending lymph stream in the perineural sheaths, and showed that toxins and bacteria in pyogenic infections may reach the central nervous system by this path. In human diphtheria it is a striking fact that the commonest form of paralysis—that of the palate—occurs at the site of the infective focus. Walshe would explain this form as due to ascending lymphogenous infection along the nerve sheaths, while the paralysis of accommodation of the eyes and the multiple neuritis would be due to action through the blood stream. In support of this view he reports two cases of wound diphtheria. The first was that of a physician who contracted diphtheria of the skin of the thumb and later developed neuritis of the right arm, followed by multiple neuritis of the arms and legs. The second case was one of multiple neuritis following a gunshot wound of the lumbar region; local paralysis was not observed. In both these cases there was an absence of involvement of the cranial nerves, as was to be expected if the author's view is correct.

[W. T.]

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MILITARY MEDICINE.

War Nephritis.

KEITH AND THOMSON (*Quart. Jour. of Med.*, April, 1918) have made careful studies of 22 cases of this condition. War nephritis is a form of acute nephritis in which edema and dyspnœa are prominent features. It has been very common in the present war, the authors having observed no less than 300 cases. By most authorities it is regarded as identical with the acute nephritis of civil life, modified by the conditions of warfare; others consider it a specific disease of unknown, probably infectious, origin. The authors divide their cases into a "resolving" and a "non-resolving" group, basing their classification on the clinical course. The resolving cases get free from edema sooner, show less impairment of renal function, a more rapid disappearance of albumin, and, in general, run a more favorable course. The blood pressure is moderately elevated at first, falling to normal within a short time. There is gross hematuria in 25%, microscopic blood in all cases. The non-protein N. and the urea of the blood are moderately increased, the excretion of phenolsulphonephthalein, likewise. With the disappearance of the edema there is a marked diuresis, with a heavy excretion of chlorides; in 50% the concentrate of Cl in the urine is increased at this time. There is a mild acidosis at the onset, not sufficient to account for the dyspnea.

The non-resolving group shows a long course and slow disappearance of the edema, which clears up usually in two to seven weeks; in one case it was still present three months after the onset. The periodic appearance of gross blood in the urine is a frequent finding and secondary anemia is common. The authors state that in 50% the urine showed a tendency to fixity of the specific gravity, but unfortunately they made no direct tests for this, either by excluding fluids or by the single administration of a large dose of water, so that this statement needs confirmation. The urea and non-protein nitrogen of the blood are considerably increased and the excretion of phenolsulphonephthalein correspondingly impaired.

Relapses were noted frequently in both groups, occurring in 25% of the cases studied. They were severe, often worse than the original attack, from which they differed in the absence of dyspnea and in the trifling amount of edema. They were evidently infectious, being ushered in with high fever, hematuria, oliguria and a return of tenderness in the costovertebral angles. In two cases they were accompanied by epididymitis and phlebitis respectively, in the remainder no cause could be assigned. The relapse was always accompanied by a marked and sudden drop in both the total and the percentage excretion of chlorides, which persisted for a long time after the amount of urine had become normal. There was also

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SUMMER SKIN DISCOMFORTS
CALL FOR
KORA-KONIA
DUSTING - POWDER - DRESSING
MADE ESPECIALLY FOR PROFESSIONAL USE
SAMPLE
THE HOUSE OF MENNEN, NEWARK, N. J.

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a marked change for the worse in the excretion of phthalein and in the figures for blood nitrogen and urea.

The fatal cases showed a glomerulo-nephritis similar to that of civil life and a tendency to hemorrhages in the heart, spleen, intestine and kidneys. The mortality was 2.3% for 300 unselected cases, but considerably higher in the group studied. The prognosis for complete recovery is uncertain as practically all the cases had albuminuria on their discharge to England, and have not been followed long enough for final statements. All of the non-resolving group were still in the hospital four to seven months after the onset, and in some of these the condition is likely to become chronic.

The authors treated their cases of acidosis with alkali and were able to restore in this way the normal acid-base relationship in the blood. They also believed that this form of treatment resulted in an improvement of renal function, but this appears doubtful to the reviewer. [W. T.]

SURGERY.

Surgical Treatment of Penetrating Wounds of the Thorax.

Gray, H. M. W. of Aberdeen, Scotland, Consulting Surgeon to the British Expeditionary Force, includes in this category all chest wounds in which there is injury to the pleural or mediastinal areas of the chest, whether the missile itself has pierced these or not. At a casualty clearing station these cases are in a proportion of about one to forty wounded men. On entrance the cases divide themselves into four classes: (1) Those which do not require operation; (2) Those which are obviously beyond help and die in a short time; (3) Those which need immediate operation, and (4) Borderline cases where the question of whether to operate or not is hard to decide but of greatest importance in the ultimate results.

The majority of cases reach the station in a state of collapse and the first treatment consists in putting to bed in a semirecumbent position, warmed and stimulated. Most of them require a sedative, and pantopon is superior to morphia. If a sucking wound is present, it should be closed with a dressing or with adhesive.

Cases of closed hemothorax are the ones which need the most watching and where the question of operation is most bothersome. If such a case shows no fluid above the nipple line, is not increasing and shows no signs of infection, it may be sent to the base hospital in from three to six days. If, however, the initial temperature, pulse and respiration do not quiet down, an exploratory puncture must be done. If this shows a beginning anaerobic infection, operation should be done at once. In certain cases of mild infection, repeated aspirations may result in cure. In cases of large hemothorax, aspiration may be necessary to relieve the patient's distress, but during the first three or four days, only just enough to make patient reasonably comfortable should be removed, as any more may result in fresh bleeding.

Cases where there are large open wounds, many of them with fragments of shell in the chest or with bits of rib projecting into lung or heart, demand operation as soon as the initial collapse has been combated. In all of these cases the wound must be enlarged so that the surgeon's hand can get free entrance. All damaged tissue must be cut away and removed. Foreign bodies found and removed, blood clot sponged

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out, bleeding stopped, rents in the diaphragm closed, if present, and then the wound or wounds closed tight. Routine aspiration should be done within 24 hours of operation and at least every two days thereafter. This will often prevent the need of a later drainage operation, but if severe constitutional symptoms appear this should be carried out.

The choice of anesthetic is important in these cases. Ether should be avoided and, if a general anesthetic is necessary, gas and oxygen should be employed. As a rule, however, local and nerve blocking anesthesia is all that is necessary. [E. L. Y., Jr.]

NEUROLOGY.

THE TREATMENT AND DEGREE OF CURABILITY OF NEURASTHENIA PURA.

BENNETT (*The Practitioner*, June, 1918) in his article on neurasthenia pura, continued from the May number of *The Practitioner*, presents his conclusions as follows, in regard to this condition:

1. Great attention should be paid to the question of prophylaxis of the predisposition. Timidity, self-consciousness (manifested by blushing, etc.), introspection, and "nervousness" constitute the elemental traits of our potential neurasthenics, so that the physical training and moral education of children and adolescents exhibiting this combine of stigmata, should be such as will best tend to counteract these nerve "weaknesses" and raise the resistance of the psychical apparatus to emotive influences.

2. The symptoms constituting the precursory stage of the disease, the pre-neurasthenic state, must be treated as such, and not as isolated manifestations dissociated from the cause or causes upon which they fundamentally depend.

3. Neurasthenia is a highly curable disorder, the degee of curability being dependent upon the degree of morbid nervous heredity, the duration of the pre-neurasthenic state, the duration of the actual neurasthenia before the treatment advocated was begun, the patient's age and general health. The prognosis is not excessively affected by the first three mentioned factors.

4. The disease is, as a rule, neither self-limiting nor abortive, but, indeed, progressive and persistent when untreated or improperly treated.

5. Neurasthenia is not usually curable in the sense that the patient's equilibrium can be brought up to the normal average or the physiological ideal, the word "cure" in reference to this disease being employed as synonymous with restoring the patient's mind to the *status quo* before the neurasthenic syndrome first manifested itself.

6. The Weir-Mitchell method is not only not the treatment *par excellence* for this disorder, but, in most cases of neurasthenia pura, will fail to do much good, and, in virtue of the time thus uselessly expended in its application, might exert an uncomforting and depressing influence on the patient's belief in recovery, and, therefore, actually aggravate the neurasthenia.

7. The best treatment for this disease is that comprising the therapeutic measures referred to, exhibited in combination, the most important of these being D'Arsonval high-frequency, and home isolation. Prolonged daily rest in its absolute form is also an outstanding and integral part of the "cure." Employing these measures as a routine method, symptomatic treatment will be reduced to a minimum. [J. B. H.]

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MEDICINE.

THE RESULTS OF TREATMENT IN PERNICIOUS ANEMIA.

BLOOMFIELD (*Johns Hopkins Bulletin*, May, 1918) presents the results of an analysis of 57 cases of pernicious anemia, with particular reference to the comparative value of various methods of treatment. He discusses the effect of treatment with reference to its effect on the total duration of the disease, the readiness with which remission is induced, the length of the remission, and the effect of a particular form of therapy on special symptoms, and the character of the blood picture.

His conclusions are as follows:

1. No definite evidence has been found that either transfusion, splenectomy, or elimination of foci of infection prolongs the life of patients suffering from pernicious anemia.
2. Transfusion performed at a time when the patient was not refractory brought on remission in about half the cases, and enabled the blood count to be raised to a higher level than in cases not so treated.
3. Such artificial plethoras did not increase the duration of the remission, although the patients usually had a sense of well being while the count was high.
4. At other times the same patients were refractory to transfusion as well as to other methods of treatment.
5. The central nervous system symptoms were as little benefited by transfusion and splenectomy as by other methods of therapy.
6. Transfusions of blood were not "held" better after splenectomy than before.

[J. B. H.]

EPIDEMIC ENCEPHALITIS.

WILSON (*The Lancet*, July 6, 1918) discusses the epidemic of polioencephalitis which has recently occurred in London. He presents the details of thirteen cases, and discusses the clinical and pathological signs and symptoms and the general nature of this disease. [J. B. H.]

CEREBRO-SPINAL FEVER.

MACLAGAN (*Edinburgh Medical Journal*, June, 1918), in a continued article, summarizes the general subject of cerebro-spinal fever as follows:

Cerebro-spinal fever is a specific infectious disease.

The causative organism is the diplococcus intracellularis of Weichselbaum, commonly known as the meningococcus.

This organism is carried in the throats of apparently healthy persons, who are known as "carriers."

An epidemic of cerebro-spinal fever is really an epidemic of meningococcal "carriers," with sporadic cases of the disease.

The original site of the organism in the body is the posterior nasopharynx. From this local seat of infection the meningococcus spreads, *via* the bloodstream, to the leptomeninges of the brain and cord.

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Infection of the meninges may not necessarily result from infection by the meningococcus. In about 2% of cases the initial septicemia is so severe that the patient succumbs before the lesions of the meninges have time to develop. In these the characteristic lesion is found to consist in a hemorrhagic inflammation of the adrenal glands, associated with purpura. To combat the great fall in blood-pressure which results, intravenous or intramuscular injection of adrenalin is useful in order to restore the tone of the peripheral circulation.

The signs and symptoms of cerebro-spinal fever are due to the combination of several factors, which are all present to a varying degree in every case of the disease.

1. The general toxemia, which is common to all infectious diseases.

2. The lesions of the central nervous system and its covering membranes.

3. The presence of certain products of degeneration of the myelin of the nerve fibres, namely cholin and neurin.

All these factors are present in any one case, the varying pictures produced depending on which predominates.

Cases of cerebro-spinal fever may be classified into the following types: (1) Fulminating type; (2) Ordinary acute type; (3) Suppurative type; (4) Abortive cases; (5) Mild cases; (6) Posterior basic meningitis.

These types can be distinguished both clinically and bacteriologically.

Death may be due to either the severity of the infection or to the establishment of internal hydrocephalus.

Treatment with specific antisera holds out more hope of success than any other line of treatment.

Since the institution of this means of treatment, the mortality-rate of cerebro-spinal fever has fallen from 70 to 90% to 30 to 40%. The proportion of patients who suffer from permanent and disabling complications has been reduced by an even more remarkable extent. [J. B. H.]

REPORT ON AN INVESTIGATION OF 463 CASES OF SUPPOSED DYSENTERY, WITH NOTES ON THE TREATMENT OF SOME WITH AN EMETINE ADSORPTION PRODUCT.

DONALDSON, CLARK AND MCLEAN (*The Practitioner*, July, 1918) summarize their study of 463 cases of supposed dysentery as follows:

1. From a study of the type of case dealt with in this paper, it would appear that, while three examinations of the excreta will probably detect about 95% of carriers amongst those convalescent from bacillary dysentery, at least 5 examinations ought to be made in cases of amebic dysentery.

2. As this investigation has shown that a considerable proportion have a double or triple infection, we are of the opinion that at least 5 examinations of the excreta should be the rule in the case of all suspected of having dysentery.

3. It is important to bear in mind that the urine may be a possible source of infection.

4. In the search for protozoal cysts we recommend the double stain process in preference to the simple iodine method, in order to minimize the risk of missing positive cases, especially when the infection is a light one.

5. As regards treatment, while exact data concerning the amount of emetine given abroad subcutaneously are wanting, the results, judging from the cases which have reached us, appear to indicate comparative inefficacy of that form of administration.

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6. Two preparations have been used here in treatment, *viz.*, emetine bismuthous iodine and an emetine adsorption product. These appear to be of equal potency as regards rendering the stools negative, and superior to emetine given subcutaneously.

7. B.E.I., however, is handicapped by reason of its disturbing effect on the patient, and, in our opinion, is inferior in this respect to the emetine adsorption product which, for the most part, can easily be tolerated.

8. As our cases appear to show that not more than 50 to 60% may be regarded as possible cures after one course of 12 doses, we urge that the minimum course of 12 doses should be increased.

9. As the unfortunate concomitant effects of B.E.I preclude its prolonged use, we recommend that the emetine adsorption product should be used in its place as a routine treatment.

10. Finally, as in our series of treated cases, those which yielded the regulation 3-negative results could no longer be followed up to enable us to give any opinion as to permanent cure, we wish to suggest, as a counsel of perfection, that such cases should be followed up officially, whether in civil life or in the army, and that periodical examinations of the excreta should be made over a certain determined period.

11. We make these suggestions because we consider that there will be found in the country, when the present army is disbanded, a reservoir of latent infection with a certain potential for initiating outbreaks of disease. [J. B. H.]

TACHYCARDIA: OBSERVATIONS UPON ITS OCCURRENCE IN THE ENTERIC AND OTHER FEVERS.

MARRIS (*The Lancet*, May 11, 1918) discusses the occurrence of tachycardia in typhoid and other fevers. In 650 cases there was a sufficient degree to attract attention in 75 cases. Five were judged to be cardiac in origin, 40 due to vasomotor instability, and 10 of the postural variety. He divides these tachycardias into three groups: (1) cardiac lesions; (2) postural or atonic; (3) due to general instability of the vasomotor nervous system.

He believes that this condition should not be regarded too lightly, and that the soldier should not be returned to duty entailing the performance of arduous and sustained effort until the heart has regained its normal tone. [J. B. H.]

"BOTULISM" AND HEINE-MEDIN DISEASE.

CROOKSHANK (*The Lancet*, May 18, 1918) discusses the subject of "botulism" and its relation to what he calls "Heine-Medin disease." The present epidemic in London is identical with the epidemic in New York in 1916. It is important that cases occurring in adult and advanced life should not be regarded as varieties of "hemiplegia," "myelitis," "cerebral thrombosis," "uremia," etc. The profession should recognize cases with abortive nervous symptoms, and abortive cases with no nervous symptoms. The disease has three clinical stages:—(*a*) That of initial illness, with, perhaps, sore throat, respiratory or gastro-intestinal disorder; headache and fever. This stage may be: (1) So trivial that it is overlooked at the time; (2) Such as to attract attention and treatment as "influenza," and so forth; (3) So severe that it is fatal in a day or two. Sometimes nervous symptoms occur in this stage.

(*b*) A latent period that may be very short (24 hours or even less), or prolonged to perhaps a fortnight or even more.

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(c) The stage of definite nervous symptoms. This stage may be: (1) absent or (2) "abortive," (3) rapid or (4) sudden in onset, (5) "paralytic" or (6) "non-paralytic," (7) so consecutive (a) as to appear clinically a part of it, or (8) so removed from (a)—by (b)—that connection is not at first considered by the medical man. Abortive nervous cases are quite common, and I have seen some diagnosed as "functional." But it is very difficult to say (1) how many cases occur without nervous symptoms, and (2) how many immune carriers there be.

The disease is communicable, especially in the stage marked "c".

In respect to individual treatment the following suggestions are made:

1. Rest and good nursing are essential.
2. Careful cleansing of the mouth and pharynx, and attention to the state of stomach, bowels, kidneys and bladder are imperative.
3. There is experimental and clinical evidence in favor of early, and at first intensive, administration of urotropin, which it is believed, may be combined usefully with salicylate of soda and benzoate of ammonia, in free doses.
4. The employment of strychnine is of use in cases attended by bulbar exhaustion, or by paralysis of the muscles concerned in respiration.
5. The application by an atomizer of liquid paraffin to the mouth, nose and pharynx alleviates dryness of the passages and, by lessening foulness, diminishes the risk of secondary pulmonary affections. To this end, a drop or two of oil of peppermint, or of izal, may be shaken up with each ounce of liquid paraffin used.
6. Confinement to bed should be prolonged rather than curtailed, and cases "discharged" should be watched for at least three months in order that record be obtained of any sequelae or permanent disability. [J. B. H.]

MILITARY SURGERY.

Blood Transfusion in War Surgery.

Robertson (*The Lancet*, June 1, 1918) describes his method of performing blood transfusion. There are three indirect methods of blood transfusion in general use. These three he describes in brief, with the advantages and disadvantages of each. He then discusses the time for blood transfusion, the amount of blood to be transfused, the results, the selection of a donor, post-transfusion reactions, and the dangers of hemolysis. In 57 cases of primary hemorrhage he believes that blood transfusion was a life saving measure in 36. [J. B. H.]

The Technic of Infected Wound Closure.

Gurd (*The Lancet*, May 25, 1918) describes the technic which he uses in closing infectious wounds, and summarizes the advantages of his method as follows:

1. Lessening of discomfort and pain to the patient as a result of increase in interval between dressings and shortening of open wound period.
2. Improvement in functional result in consequence of (a) less frequent disturbance of bone fragments during the dressing stage and the earlier application of complete immobilization in cases in which this is indicated. (b) A diminution in the number of adherent painful scars and nutritional disturbances. (c) Earlier opportunity for secondary operations, such as nerve and tendon suture and massage, etc.
3. Early transformation of patients from the "dressing" to "observation" class of men.
4. Shortening of hospital days per patient and consequent increase in the usefulness of hospital beds.
5. Economy of dressing material, both by reason of the infrequency of dressings and by shortening of the dressing period. [J. B. H.]

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MILITARY SURGERY.

DELAYED PRIMARY SUTURE.

BALL (*The Lancet*, June 29, 1918) in this article calls the attention of surgeons to the desirability of performing the so-called "delayed primary suture" of wounds as frequently as possible in cases which permit of its being carried out. Primary suture is, of course, the ideal method of treatment. There are many cases, however, where this is not possible. So-called "delayed primary suture" then becomes the next most important line of treatment.

This paper deals with 100 consecutive cases treated at a general hospital. He claims the following advantages for his methods:

1. By a long experience, there is no doubt in my mind that many of the wounds which healed in 10 days would have taken many months to do so had they been allowed to granulate in the usual way. A quite trivial wound often takes weeks, yet, without exception, where successful results were obtained, the period of healing was ten days. As 85% of the cases were successful in their results, the advantage to the nation as well as to the patient is obvious.

2. Even if the result is not completely successful, partial success may accrue, and, besides limiting the period of convalescence, will also lessen the pain suffered by the patient while he is being dressed, and will also diminish the area from which absorption can take place.

3. Large, deep scar-formations are avoided or limited, thus preventing the subsequent formation of deformities following contractures.

4. In the case of fractures, the advantage of a successful result is manifest. The conversion of a compound into a simple fracture avoids that long period of illness following osteomyelitis, often suppurative arthritis and possible amputation, sequelae which so often occur.

5. When large vessels are exposed in either subcutaneous or deep positions, the desirability of covering them over is obvious.

6. Great advantage in wounds of skin over bones in subcutaneous situations—*e.g.*, tibia, ulna, etc.

7. Avoids painful dressings even if only partial suture performed or partial success only obtained.

8. Even if the wound does suppurate it can always be opened up, the patient being in no worse a position than he was before. The method is nearly always possible in which adequate initial operative measures have been carried out, with a strong probability of success. Any method which limits the duration of the period of healing, especially at a time like this, is worthy of consideration, and this is one of them.

[J. B. H.]

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PREVENTIVE MEDICINE AND HYGIENE.

THE TEACHING AND TRAINING IN HYGIENE.

KENWOOD (*The Lancet*, May 25, 1918) takes up the training of non-medical public health workers. He considers the health visitor to be a hygienic pedagogue working among the members of the community. Public recognition of the supreme importance of motherhood and child welfare is leading to the employment of the women public health workers. He considers the wide range of the activities of such a visitor, the existing provisions for their training, and the different functions of the health visitor and the nurse. He suggests the need of training centres and goes into the details of a proper course of training.

In the remainder of his article he takes up the subject of sanitary inspectors and the importance of museums of hygiene, and the standards of training and examinations. [J. B. H.]

SURGERY.

PERFORATED GASTRIC AND DUODENAL ULCER.

WOOD (*Edinburgh Medical Journal*, June, 1918) discusses the general subject of perforated gastric and duodenal ulcer. He considers this condition from the point of view of age, occupation, history of indigestion previous to perforation, premonitory signs of perforation, and factors determining its occurrence, and the signs and symptoms following perforation. He discusses the details of the operation. In his series there were nine deaths in 30 cases, a mortality of 30%. [J. B. H.]

MEDICINE.

THE TREATMENT OF SEVERE RELAPSING CASES OF MALARIA.

GUNSON, WINNING, JOHNSTONE, PORTER AND SCOTT (The Lancet, June 22, 1918) describe various cases of severe relapsing cases of malaria. They summarize their work as follows:

1. A considerable number of patients suffering from severe malaria—amounting in one series of 328 cases to 30% of the total number under treatment at one period—when treated by oral quinine continue to relapse, develop long periods of sustained pyrexia, or become increasingly cachectic.

2. A group of 90 successive patients of this type

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were treated by two intensive courses of quinine (intramuscular course being repeated 10 days later). The result of such treatment was an immediate, progressive, and marked improvement in the general condition in all cases. Relapses occurred in 44% of cases within four weeks, but were of considerably less severity than previously and were completely controlled by oral quinine.

3. Another series of 552 relapsing cases, less severe in type were treated, during the apyrexic period, by three different methods:

(*a*) 368 were given no quinine; of these 46% relapsed within 3 weeks.

(*b*) 94 were given quinine gr. 20 on Saturdays and Sundays; of these 10% relapsed within 3 weeks.

(*c*) 90 were given quinine gr. 20 daily; of these 8% relapsed within 3 weeks.

4. Routine treatment by oral quinine is adequate in the majority of cases of relapsing malaria; it is necessary to continue the quinine treatment in doses of 20 gr., either daily or twice weekly, during the patient's stay in hospital to obviate a high incidence of relapses.

5. In the cases (the minority) where oral quinine proves inadequate, intensive treatment by one or more courses of combined oral and intramuscular quinine (gr. 60 daily for four days) is followed by such marked improvement as to justify the adoption of this treatment as a routine procedure for such cases, the chief indication for this course being progressive cachexia and visceral enlargement in a patient suffering repeated relapses or prolonged pyrexia and not responding to oral quinine. [J. B. H.]

On the Clinical Aspects of Tuberculous Mesenteric Glands.

Carson (*The Lancet*, June 22, 1918) discusses the frequency of mesenteric glands, the origin of the infection, course of the disease, age incidence, differential diagnosis, and treatment. He summarizes his opinions as follows:

1. The mesenteric glands may be the only part of the body affected by tubercle, and especially they may be affected apart from tuberculous peritonitis.

2. There is a tendency to spontaneous recovery, as evidenced by calcification.

3. The condition is not limited to childhood.

4. A diagnosis can be made with reasonable certainty without the presence of a palpable tumor.

5. Pain is characteristic in type and is due to spasm of the affected segment of small intestine.

6. This spasm may give rise to intussusception.

7. Complications are frequent and may be serious.

8. The caseating form of tuberculous peritonitis is probably the last stage of caseating mesenteric glands.

9. Operative treatment should be undertaken owing to the difficulty of excluding complications in apparently "typical" cases, and such treatment gives a good prospect of permanent cure. [J. B. H.]

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MEDICINE.

THE EFFECTS OF ANTACID MEDICATION ON GASTRIC ACIDITY AND SECRETION.

CROHN, B. B. (*Am. Jour. Med. Sci.*, Jan., 1918) finds that much misuse of therapeutic doses of the alkalies is common. With too small a dose no beneficent neutralization is accomplished, while the attendant secondary rise in acidity rarely fails to assert itself. When too large a dose is employed one notes paralysing of the digestion for a considerable period, following which there appears a hyperacidity of even greater degree than the one which one undertook to combat. The combination of slowly acting with the more rapid alkalies is the best method of treatment. Atropin has a restricted use and should be employed only as a desiccating agent in instances of hypersecretion. The use of fractional doses of the alkalis distributed over the course of digestion is the most efficient and physiological method for the employment of alkalis, and for this purpose magnesium oxide is the most dependable salt. It seems very questionable whether prolonged use of the alkalis leads to any permanent diminution of the acid secretion, and it may be that the opposite result is sometimes obtained. A lasting relief from hypersecretion is not to be sought in antacid medication nor in olive oil or atropin, but more likely in proper regulation and restriction of diet and general hygiene of the particular patient. [E. H. R.]

TREATMENT OF LEPROSY WITH SODIUM GYNOCARDATE.

PEACOCK (*Ind. Med. Gazette*, March, 1918) reports his results with intramuscular injections of sodium gynocardate in six cases of leprosy. The injections were given three times a week in rapidly increasing doses to the point of tolerance, and tablets were given by mouth on non-injection days. The calves, thighs, buttocks, forearms and deltoids were injected in turn, each site being given plenty of time to recover before being used again. The largest single dose given in this series of cases was 24 grains. In all, about six-hundred injections were given without a single abscess. After three months of injections, the patient was given a month with no injections, but increased doses by mouth. Notable improvement occurred in all the cases. [L. D. C.]

PATHOLOGY, PHYSIOLOGY AND PHARMACOLOGY.

THE PATHOLOGY OF THE SKIN LESIONS PRODUCED BY MUSTARD GAS (DI-CHLOR-ETHYL-SULPHIDE).

WARTHIN, A. S., and WELLER, C. V. (*Jour. of Lab. and Clin. Med.*, May, 1918) write a very thorough and interesting paper on this subject which is somewhat broader than the title indicates. The experimental work was done on human as well as animal subjects, and the literature on the effects of this gas in general is well reviewed. Dichlorethylsulphide was first made by Victor Meyer in 1886 and depends for its irritant action largely on its chlorine content. It is a heavy, oily fluid, sinking below water and not miscible with it, of neutral reaction, having

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a faint sweetish ethereal odor but slightly suggestive of the sulphur compounds.

Symptoms in man are the initial tendency to sneeze, without irritation of eyes or lacrimation; this is produced by a gradually increasing soreness and irritation, followed, after about twelve hours, by a free discharge of mucus from the nostrils, painful irritation of the conjunctivae and occasional vomiting. Small blisters form on the hands, face and neck, and blistering may occur even through the clothes. None of these lesions manifests itself at once but develops slowly after several hours. In severe cases a purulent broncho-pneumonia supervenes. It takes six weeks or longer for the skin lesions to heal. The throat and lung affections recover more slowly. Aphonia is a typical initial symptom of the throat lesion, followed by tracheitis, bronchitis with violent spasms of painful coughing. The skin lesions are commonly quite painful. Dry clothing and sleeping quarters may prevent the development of symptoms after slight exposure and may lessen the severity of symptoms in those more severely gassed. Excellent photographs of the skin lesions are published in this article. The authors do not agree with the early English and French works that the skin lesion is made worse by washing, but they do believe that the vesicle formation and soreness can be prevented by early scrubbing with tincture of green soap and water. This must be done within two minutes after application and, of course, is not an applicable procedure in war times. The authors believe that the common occurrence of the lesion in the axillae, between the fingers and toes and in the groin and genitals, is due to the greater moisture of these parts from perspiration and the resulting re-solution of the gas. The article is of decided interest.

[E. H. R.]

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MEDICINE.

INTRARECTAL ADMINISTRATION OF ARSPHENAMIN.

BOYD, A. S., and JOSEPH, M. (*Jour. A. M. A.*, Aug. 17, 1918) find that the intrarectal administration of this drug is a successful method of treating syphilis and relapsing fever. The untoward effects are practically eliminated by slower absorption. The method requires no special skill and can be entrusted to the nurse or even the patient himself. The dosage can be increased by this route and given as often as every three days. It is the method of choice in nervous subjects, in obese or very anemic women, and in children. It offers at least the same curative value as the intravenous route. [E. H. R.]

THE TREATMENT OF DUODENAL ULCER.

SATTERLEE, G. R. (*Med. Rec.*, Aug. 17, 1918), in a brief article, emphasizes some important conclusions. Duodenal ulcer needs a careful differentiation from gastric ulcer, as the prognosis and treatment are distinctly different. Treatment of duodenal ulcer is usually both medical and surgical—neither side should be neglected. Medically, rest, diet and duodenal lavage are advisable; operation is indicated in severe cases. The no-loop gastroenterostomy is the operation of choice, but this may be useless if diseased conditions in the right iliac fossa are not rectified first; *i. e.*, removal of chronic appendix, adhesions, kinks or inflamed ceco-colon. The author believes that in all operations for chronic appendicitis the right hypochondrium should be carefully inspected for evidence of duodenal ulcer, as the two conditions are so closely associated. [E. H. R.]

THE ABSENCE OF THE BACILLUS INFLUENZAE IN THE EXUDATES FROM THE UPPER AIR-PASSAGES IN THE PRESENT EPIDEMIC.

LITTLE and OTHERS (*The Lancet*, July 13, 1918) discuss the present epidemic of influenza among the British and Canadian troops. Clinically, the disease simulates influenza. It is an acute febrile infectious condition of three or four days' duration, characterized by sudden onset with chills, headache, pain all over, and general malaise. The fever soon reaches its maximum, which varies from 99° to 102°. Many cases develop a harsh cough, with thick, scanty sputum. On the fourth day, the fever generally breaks, leaving the patient feeling practically normal. It is to be noted that the fever is of shorter duration, that the total course of the disease is shorter, and that the gastro-intestinal symptoms are less marked than in the form of influenza commonly known as such, and due to the influenza bacillus.

They come to the conclusion, therefore, that the present epidemic, although resembling influenza, is due to a somewhat different cause, the exact organism being at present unknown. [J. B. H.]

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SURGERY.

THE CONDITIONS UNDER WHICH THE STERILIZATION OF WOUNDS BY PHYSIOLOGICAL AGENCY CAN BE OBTAINED.

WRIGHT, FLEMING AND COLEBROOK (*The Lancet*, June 15, 1918) present an elaborate series of investigations in regard to the sterilization of wounds by what they call physiological methods. They summarize their opinions as follows:

1. It has been erroneously inculcated that every wound should be sterilized before closure; and that, therefore, primary suture should be avoided and secondary suture undertaken only after a course of antiseptics. There is now no question, with respect to primary suture, that the wound taken after early surgical cleansing and resection is as good as sterile; and, with regard to secondary suture, undertaken with a wound in good condition and a purely serophytic infection, that such operative procedure, provided it leaves behind no infected dead spaces, directly contributes to sterilization.

2. It has been taught that we should judge of the fitness of the wound for closure by necro-pyocultures and direct microscopic examination of the pus. We have learned that it would be infinitely more reasonable to base our judgments upon the results of bio-pyo-culture.

3. It has been taught that suture cannot be successful in a wound containing a hemolytic Streptococcus pyogenes. We have seen that leucocytes can, given proper conditions, successfully combat this, and, of course, all other streptococci; and that these conditions can be realized in connection with the suture of wounds.

4. It has been taught that for the removal of sloughs from foul wounds chemical solvents are required. We have learned that sloughs can be removed by tryptic ferment set free from disintegrated leucocytes, and that the liberation of this ferment can be greatly accelerated by breaking down the leucocytes in the discharges with hypertonic saline solution.

5. Lastly, it has been taught in connection with antiseptics that sterilization is obtainable only by continuous or very frequently repeated application. We have learned that there is nothing to prevent any part of a wound surface which has been washed quite clean of albuminous matter being sterilized by a single application of antiseptics. [J. B. H.]

RATIONAL PRE-OPERATIVE TREATMENT WITH SPECIAL REFERENCE TO PURGATION.

PEET, M. M. (*Jour. A. M. A.*, July 20, 1918) emphasizes in his paper a fact or group of facts that is fast becoming recognized as of importance in preparation of patients for operation. He says: "Preoperative catharsis has little to recommend it. The disadvantages are: physical and psychic weakness, loss of sleep, loss of body fluid, and hypertonicity of the intestinal wall, change in the bacterial flora of the intestine, and irritability of the rectum and lower colon. The patient not subjected to pre-operative catharsis does not, as a rule, suffer from thirst, nausea and vomiting, abdominal distention and gas pains. [E. H. R.]

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KINEPLASTIC AMPUTATIONS.

PUTTI (*The Lancet*, June 8, 1918) discusses his method of doing amputations, using motor flaps. A motor flap, in order to correspond with the object for which it is made, must possess every requisite for withstanding a firm, resisting, and painless grip, also a traction that, in not a few instances, may attain a high degree. It must be provided with a sufficient amount of functional muscular tissue to guarantee the accomplishment of the task that will be demanded of it.

He describes the technic of his method and presents illustrative cases with photographs. He believes that this method is one of the most brilliant discoveries of orthopedic surgery and should be used on a large scale. It is essential that the surgeon and the mechanic should work in harmony in order to solve satisfactorily this difficult problem. [J. B. H.]

early surgical cleansing and resection is as good as sterile; and, with regard to secondary suture, undertaken with a wound in good condition and a purely serophytic infection, that such operative procedure, provided it leaves behind no infected dead spaces, directly contributes to sterilization.

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MILITARY SURGERY.

GUNSHOT WOUNDS OF THE PERIPHERAL NERVES.

NOON (*The Lancet*, July 27, 1918) discusses the treatment—operative, postural and electro-therapeutic—of gunshot wounds of the peripheral nerves. He describes the details of the operative technic, and the complications which may arise. He concludes as follows:

1. That the diagnosis of an injury to a peripheral nerve ought to be made at the earliest possible time.
2. Successful recovery depends upon early, correct, and continuous treatment.
3. Primary suture should be considered and practiced wherever possible.
4. That there should be no unnecessary delay in exploring a nerve if there is sufficient evidence that it has received some injury resulting in a macroscopic pathological lesion.
5. It is almost certain that some macroscopical lesion is present in cases which show no signs of recovery after four months' treatment.
6. That operations on injured nerves should only be done in well-equipped general hospitals, and by those surgeons who have ample experience in such cases.
7. That sufficient attention is not usually paid to the early pre-operative and post-operative treatment, and that paralytic deformities and shortened muscles are often the result of ignorance and neglect.
8. That the extreme gravity of an injury to a peripheral nerve is not sufficiently realized by the general profession. [J. B. H.]

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MEDICINE.

HEPATIC CIRRHOSIS DUE TO KALA-AZAR.

NATTAN-LARRIER (*Bulletin de l'Académie de Médecine*, May 28, 1918) states that infantile kala-azar in its chronic form produces either an insular or a diffuse type of hepatic cirrhosis, resembling oftentimes that type found in congenital syphilis. The Leishmania are present in vast numbers throughout the new-formed sclerotic tissue. [R. M.]

CONCERNING TRAUMATIC SHOCK.

BRECHOT and CLARET (*Bulletin de l'Académie de Médecine*, May 28, 1918), in addition to the well-known symptoms of shock: paleness of the face, dilatation of the pupils, coldness of the extremities, cold perspiration, sub-normal temperature, small, frequent and thready pulse, and irregular respirations, have in their article laid great stress upon the amount of vasomotor paralysis by taking the mean between the maximum and minimum arterial tension. Their conclusions are that if this mean is greater than 21/2 (2.05) the prognosis is good, but if it is under 2.05 recovery seems improbable. Also, they have taken into consideration the increase of tension of the spinal fluid, and consider it as a great aid to the treatment. The method of determining this tension was by means of Claude's apparatus. [R. M.]

ON THE SYNDROME OF ACETONEMIA OF CHILDREN.

REMOND and POUX (*Bulletin de l'Académie de Médecine*, May 28, 1918), in discussing this condition which many writers consider under the name of "cyclic vomiting," believe (judging from their vast experiences) that this acetonemia is due to a diminution of pancreatic secretion.

This improper function of the pancreas they consider may come from an intestinal intoxication or from a nervous derangement. However, the exciting cause is probably due to an indiscretion of diet.

Their line of treatment is to combat the acidosis.

They give pancreatic juice (the total amount obtained from a fresh gland) subcutaneously, and, in addition, large doses of Sod. Bicarb. In extreme cases $Ca(OH)_2$ has been administered intravenously.

The prophylaxis seems to be in regulating the diet. A fat-free, and one with only a moderate amount of meat, with the routine ingestion of limewater. They have had good success with Vichy also. [R. M.]

BRONCHO-PNEUMONIA SPIROCHETOSIS (HEMORRHAGIC BRONCHITIS).

VIOLLE, H. (*Bulletin de l'Académie de Médecine*, June 6, 1918), during the months of January, February and March, this year, had the occasion to observe carefully thirty cases of this peculiar disease in the marine hospital of St. Mandrier.

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Although this disease was discovered by Castellani more than ten years ago, and from time to time sporadic cases have been reported elsewhere throughout the world, yet never up to the present has there been discovered a case in France.

The etiology of the affliction is, as its name implies, a spirocheta—the spirocheta "bronchialis."

Violle found in his cases that the most striking symptom was the ever-present hemoptysis—which none of the previous writers had especially emphasized—and therefore gives them the name of "hemorrhagic bronchitis" as a type of the broncho-pneumonia spirochetosis group.

The disease is apparently benign and insidious in onset. The general condition of the patient is good, there is no fever, the chest signs are mild or entirely absent. However there may be a mild apical bronchitis or a slight congestion at the bases. The expectoration is profuse, muco-purulent and blood-tinged. The cough is frequent, nocturnal, severe.

The diagnosis should be made only with the microscope as these cases simulate early phthisis, and a mild broncho-pneumonia, under which diagnoses the majority of the above cases were admitted to the marine hospital of St. Mandrier. The microscopic examination revealed in all cases a profuse number of all sorts and varieties of spirochetae, but no other parasites, such as those of Westermani. The silver nitrate stain of Fontana was used (modified by Tribondeau).

The incubation period is about a month, and relapses, or rather exacerbations, are frequent.

The disease is very contagious. It probably originated from the influx of the Asiatic soldiers and workmen. It is flourishing in the southern part of France. As one-quarter of the above-mentioned patients were French, Violle thinks that there are many similar cases that must have been overlooked.

The method of contagion is probably through the spores. Complications may arise, such as pneumonia, broncho-pneumonia and, as a sequela, pulmonary tuberculosis may develop.

Carriers are common in this disease. [R. M.]

Contraindications in the Radio-Therapy of Certain Varieties of Skin Cancers.

Darier, J. (*Bulletin de l'Académie de Médecine*, June 6, 1918) finds that the rodent ulcer only may be cured by the x-ray, provided that the deeper structures and cavities are not involved.

Sarcomata, cancer of the tongue, lips, penis, etc., are in no way helped by either the x-ray or radium. He also states that this procedure in the case of melanotic sarcoma is a waste of valuable time. Also in the secondary carcinomata, which may disappear under this treatment, as they frequently do, the prognosis of the disease is not in any way made more favorable.

Thus is it that Darier advocates in all cases in which the diagnosis is not self-evident, that a microscopic examination be made of the new growth.

[R. M.]

Large Doses in Serum Therapy.

Jousset, A. (*Bulletin de l'Académie de Médecine*, June 6, 1918) speaks from his experience with tubercular patients, and scouts the idea of anaphylaxis.

He has given more than 1500 injections subcutaneously with doses from 50 to 150 cc., and has never had any symptoms of anaphylaxis. He calls the reader's attention to the definition of this phenomenon, which is *secondary* reaction to infinitesimal doses of serum.

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Whatever reaction there has been observed has a *primary* toxic effect and not fatal.

He concludes by saying that anaphylaxis may be only found in the laboratory, and that such a fatality in human beings can be only mythical. [R. M.]

CONCERNING SPIROCHETOSIS (BRONCHO-PNEUMONIA AND HEMORRHAGIC BRONCHITIS.)

NETTER (*Bulletin de l'Académie de Médecine*, No. 23) has received reports from Beau Dide and Ribereau of researches carried out among their cases, independently. The results are, however, the same as those of Violle, which were published in No. 22 *Bulletin*. [R. H. M.]

TREATMENT OF GASTRO-INTESTINAL ATONY WITH SALINES.

HAYEM, GEORGES (*Bulletin de l'Académie de Médecine*, No. 23) has had very good results during his past 25 years' experience by using the following formulae in the treatment of this condition:

(*a*)	
Aquae Dest.	1 liter
Sodii Chlor.	
Magnesii Chlor. Crys.	āā 2½ gm.
Sodii Bicarb.	2 gm.
(*b*)	
Aquae Dest.	1 liter
Sodii Chlor.	
Magnesii Chlor. Crys.	āā 2½ gm.
Sodii Sulfatis	3–5 gm.

These treatments are particularly helpful when there is a dilatation from muscular weakness, with or without atrophy: (*b*) should be used in cases where the constipation is a predominating factor. [R. H. M.]

THE REACTION OF THE LARGE BLOOD VESSELS TOWARD OLD ENCAPSULATED PROJECTILES SITUATED CLOSE TO THEIR WALLS.

LE FORT, RENÉ (*Bulletin de l'Académie de Médecine*, No. 23) from his observations finds that the large blood vessels are rarely perforated or eroded by the projectiles. This is due to the marked elasticity of their walls. As a result, secondary hemorrhage or delayed hemorrhage is very rare. He therefore lays down this axiom: *A blood vessel is never perforated by a bullet or piece of shrapnel if it is in any way movable.* A secondary hemorrhage or a delayed one, therefore, under such conditions is *always* due to sepsis. Of course, muscular action, especially in those cases of the neck, groin and axilla, has caused hemorrhage, both secondary and delayed, but this is not due to the lack of resistance of the elastic coats of the blood vessels.

Experience has shown him that projectiles are either the cause of thrombosis, obliteration, or become encapsulated, either in the sheath or in the adventitia of the blood vessel and as a result (unless septic) there is no secondary hemorrhage or delayed hemorrhage. [R. H. M.]

THE VALUE OF DICHLORAMINE-T CHLOROSANE SOLUTION IN THE TREATMENT OF INFECTION OF THE UPPER AIR PASSAGES.

DELEAVAN, D. B. (*Med. Rec.*, July 20, 1918) uses a 2% solution as a spray, without irritating effects and with much rapid benefit, in upper air passage infections. Chlorosane is a chlorinized paraffin wax

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Massachusetts General Hospital

A course in Medicine and Pathology will be given in the Amphitheatre of the Pathological Laboratory by Dr. William H. Smith, Visiting Physician of the Massachusetts General Hospital, and Dr. Oscar Richardson, Assistant Pathologist of the Massachusetts General Hospital.

The complete clinical records of cases coming to autopsy will be presented by Dr. Smith, who will discuss the differential diagnosis. The pathological findings will then be stated, the organs demonstrated and the pathology of the cases discussed by Dr. Richardson. This will be followed by a general discussion of the cases, viewed in the light of the completed records, and attention will be called to the newer diagnostic methods and to the broad principles of treatment involved. Microscopical preparations and lantern slides will be used when necessary.

There will be nine exercises, on Wednesdays, in the months of October and November between 3.15 and 5.15 P.M.

The course is open to graduates in medicine and medical students of the third and fourth year, subject to their acceptance by the hospital.

Women admitted.

Given in connection with the Harvard Graduate School of Medicine.

A fee of $5 will be charged for the course. Application should be made to

JOSEPH B. HOWLAND, *Acting Resident Physician*,
MASSACHUSETTS GENERAL HOSPITAL, BOSTON, MASS.

TO PHYSICIANS OF AMERICA

Surgeon-General Gorgas has called for 1000 graduate nurses a week—8000 by October 1.

Twenty-five thousand graduate nurses must be in war service by January 1— in the Army Nurse Corps, in the Navy Nurse Corps, in the U. S. Public Health Service in Red Cross war nursing.

This involves withdrawal of many nurses from civilian practice and necessitates strict economy in the use of all who remain in the communities.

You can help get these nurses for our sick and wounded men by—

Bringing this need to the attention of nurses.

Relieving nurses where possible wholly or in part from office duty.

Seeing to it that nurses are employed only in cases requiring skilled attendance.

Insisting that nurses be released as soon as need for their professional service is ended.

Seeing that your patients use hospitals instead of monopolizing the entire time of a single nurse.

Encouraging people to employ public health nurses.

Instructing women in the care of the sick.

Inducing high school and college graduates to enter the Army School of Nursing or some other recognized training school for nurses.

Encouraging nurses to go to the front involves real personal sacrifice and added work on the part of the physicians whose duty it is to maintain the health of our civilian second line defense—

But the men who are fighting for their country in France need the nurses.

DEPARTMENT OF NURSING, AMERICAN RED CROSS, WASHINGTON, D.C.

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advocated by Dunham. In order to be most successful foci of infection must be thoroughly exposed before treatment is instituted. The author believes this treatment is more prompt and successful than any hitherto known. [E. H. R.]

A Study of Four Hundred Post-Mortem Wassermann Reactions.

Graves, S. (*Jour. A. M. A.*, Jan. 8, 1918) finds that post mortem reaction, confirmed ante mortem Wassermann reactions by 97% of 68 controlled cases. In 91.2% of cases showing anatomic lesions of syphilis and presenting evidence of syphilis in their histories, the serums post mortem give positive Wassermann reactions. Only 2.6% of 378 cases showing anatomic evidence of syphilis gave negative Wassermann reactions. There is no logical reason for supposing that acute infectious or malignant tissues cause positive Wassermann reactions. [E. H. R.]

MILITARY MEDICINE.

Trench Fever.

Byam, N. et al. (*Jour. A. M. A.*, July 6, 1918) present the present day knowledge on this subject in a very thorough and interesting manner. They emphasize the importance of scabies as one of the precursors of the disease. They define trench fever as a blood infection communicable from man to man by means of the louse and probably other parasites. It is characterized in its early febrile stages by recurrent pyrexia, headache, giddiness, which may be due to disturbances of joint or muscle sense, but early in the disease is generally a true vertigo, pain in the back and limbs, which is chiefly in the legs and often of considerable severity, a slow pulse in comparison with the degree of fever, conjunctival congestion, sweating, polyuria, a moderate leukocytosis at the height of the fever, and evidence of blood infection in involvement of the spleen and, in a proportion of the cases, of the liver also. A period of unstable temperature follows. Eventually a certain percentage of the patients pass into a stage of chronic ill health. These patients suffer from recurrent pains in the limbs, headaches, and various nervous manifestations, such as mental depression, excessive tendency to sweating, disordered action of the heart, and abnormal response to stimuli, all of which are accompanied by a mild degree of anemia and some loss of weight. The infection in some cases is very persistent and acute febrile relapses may occur after months of quiescence. The authors are unable to speak definitely of a seasonal incidence, but it is probable that the greater degree of louse infection in the colder months is responsible for an increase in the disease at this time. The authors go into a detailed description and discussion of the various symptoms and clinical manifestations taken separately, and the differential diagnosis from typhus and other similar fevers is taken up. Prognosis is good for rapid recovery in 90% of cases under purely symptomatic treatment. No drug or process of therapy has been found as a specific. Rest, combined with moderate exercise and thyroid therapy, seems to give the best results at present. Prophylaxis and disinfection of clothing are of the greatest importance. The article is a very good one and of great interest. [E. H. R.]

Current Literature Department.

ABSTRACTORS

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MILITARY MEDICINE.

THE PHYSICAL BASIS OF WAR SHOCK.

WAKEFIELD, H. (*Med. Record*, Aug. 10, 1918), in a very thorough article, makes a strong plea for the more physical concept and basis of the treatment of the mental and incapacity delinquency of victims of war hysteria and shock. The author contends that the physical and mental conditions are absolutely indivisible. The malfunction of time integrity, disrupted by concussion trauma, is not unlike the malproduct of an anemia, and the work of Cannon is here quoted to substantiate this view. The particular trauma may be local or general. More attention should be paid to the physical conditions underlying the pathological condition and which are ofter predisposing factors. This article covers thirteen full pages and has a good bibliography appended. It is of distinct interest. [E. H. R.]

CASES OF EMPYEMA AT CAMP DIX, VA.

By the EMPYEMA COMMISSION (*Jour. A. M. A.*, Aug. 3, 1918). This report is based on the observation of 140 cases associated with a hemolytic streptococcus. The mortality was only 4.3%. The authors feel that the chief factor in producing such an extremely low mortality was the method of treatment which was very late, instead of early, operation, and energetic efforts to build up nutrition. The older, commonly accepted idea of the desirability of an immediate operative interference in cases of empyema following ordinary lobar pneumonia, seem not to be necessarily applicable to the type of streptococcus pleuritis under study, for in these latter cases a massive pleural exudate is frequently present very early and is not at first purulent and only becomes so after a lapse of two or three weeks. If early operation is done, collapse of the lung and pneumothorax are likely to supervene. If the operation is performed late, limiting and walling off adhesions are formed and convalescence is much less stormy. There is greater danger of producing a third strain infection with early operation, and the patient is in such a desperate condition that shock is generally far greater than at the later stage.

The article is a well presented and valuable one. [E. H. R.]

WAR DEAFNESS WITH SPECIAL REFERENCE TO THE VALUE OF VESTIBULAR TESTS.

MCBRIDE and TURNER (*The Lancet*, July 20, 1918) divide cases of those men whose hearing has suffered during the war into four groups:

1. Those who heard well previously and in whom deafness had resulted from injury of the internal ear alone.
2. Those who heard well previously, but in whom middle-ear suppuration as well as injury to the internal ear had supervened.
3. Those in whom there previously existed deaf-

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ness, but in whom the tympanic membrane remained intact, the deafness having become aggravated.

4. Those who previously suffered from chronic middle-ear suppuration.

The third and fourth groups need no discussion.

They conclude that concussion deafness is generally due to some organic change, and that the prognosis is bad. The results of the vestibular tests can only be utilized in conjunction with information from other sources. If the patient shows other hysterical symptoms, vestibular tests may perhaps, under certain circumstances, help the diagnosis, but they believe it is misleading and dangerous to state that such tests do more than this. [J. B. H.]

THE CIRCULATION OF ARSENIC IN THE CEREBRO-SPINAL FLUID.

RIEGER, J. B., and SOLOMON, H. C. (*Jour. A. M. A.*, July 6, 1918) found on the examination of 123 cerebro-spinal fluids collected at intervals ranging from five minutes to twenty-three hours after intravenous injection of from 0.3 to 0.6 gm. of arsphenamin, 38 showed appreciable amounts of arsenic. The largest amount found was 0.6 mg. of arsenous oxid in 10 cc. The average amount was 0.18 mg. per cc. The shortest interval at which arsenic was found was 30 minutes; the longest two hours. With successive injections, the fluids in general show progressively smaller amounts of arsenic for the same time interval. In general these patients consistently showing the larger amounts of arsenic in their fluids made the more rapid improvement. It is suggested that intravenous injections of divided doses at one- or two-hour intervals would prove more effective in maintaining a high concentration of arsphenamin in the blood for longer periods, and thus possibly allow increasingly greater amounts to pass into the perivascular spaces. [E. H. R.]

THE CAMPAIGN AGAINST INFANTILE TUBERCULOSIS IN FRANCE.

FILLE, P. A. (*Jour. A. M. A.*, July 6, 1918) gives a very interesting account of France's efforts on behalf of her tuberculous and pre-tuberculous children. He, as other Frenchmen, states emphatically that France is not the pest house of tuberculosis that much of the press reports would indicate. The total out of 37,000,000 inhabitants is about 250,000, or 0.68%, of which barely 50,000 are children. He describes the so-called marine cure, or treatment of children in small sanatoria on the sea coast. Of these there are great numbers, and treatment in them is remarkably successful. France's furthest advance, however, is in the prevention of tuberculosis in children, or the treatment in the country in groups of the smaller children of tuberculous parents from whom they are separated and cared for in the country districts. The author is most enthusiastic over the success of this method. [E. H. R.]

SECONDARY TUBERCULOUS PERITONITIS: ITS CAUSE AND CURE.

MAYO, W. T. (*Jour. A. M. A.*, July 6, 1918) finds that the cases of tuberculous peritonitis in which surgical treatment promises to be of great aid, rather naturally divide themselves into two groups. First, and most favorable are those cases in which a definite anatomic portion or viscus of the peritoneal cavity is involved, such as the Fallopian tubes, the ileo-cecal coil and the appendix, which can be removed. Second, and less favorable, are those in which the peritoneal cavity contains a considerable quantity of fluid, occupying either the entire peritoneal cavity or a large part of it, or in which the fluid is contained in loculi composed of peritoneal adhesions.

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dividing the peritoneal cavity into compartments containing fluid. Mayo emphasizes the importance of removal of diseased Fallopian tubes in women with tubercular peritonitis. [E. H. R.]

RELIABILITY OF OZONE IN SWIMMING POOL DISINFECTION.

MANHEIMER, W. A. (*Jour. A. M. A.*, June 29, 1918) finds that ozone is a most satisfactory and valuable disinfectant for swimming pools. It is capable of purifying heavily polluted pool water. It produces no objectionable substances in the water. It improves the appearance and transparency of the water, permitting a longer continued use of the pool and a consequent reduction in the cost of maintenance. It is inexpensive in application. [E. H. R.]

THE PROBLEM OF THE RECONSTRUCTION AND RE-EDUCATION OF THE DISABLED SOLDIER.

LOVETT, R. W. (*Surg., Gyn. and Obst.*, August, 1918) very ably and clearly discusses this very important problem. The article is not suited for abstracting, but is of distinct value. [E. H. R]

OBSTETRICS AND GYNECOLOGY.

INDUCTION OF LABOR AT TERM.

REED, C. B. (*Surg., Gyn. and Obst.*, August, 1918) presents in full his reasons for this procedure and its rationale. The paper is of especial interest to obstetricians. [E. H. R.]

PHYSIOLOGY, PHARMACOLOGY AND PATHOLOGY.

TOLERANCE AND IMMUNITY.

MARCHAND, J. L. (*Jour. of Lab. and Clin. Med.*, July, 1918), in a 30-page article, describes, in elaborate detail, this rather obscure subject. He quotes the work of Vaughan and also of Gay, and shows how his particular vaccine differs from the Gay-Claypole vaccine sediment. After much elaborate discussion and detail, the author states that protein sensitization and bacterial immunity, apparently antipodal, are, in reality, identical. Vaccines are protein sensitizers. When proteins are subjected to the action of disrupting agents, as when injected subcutaneously, they may become poisons. This protein poison is not specific nor is the tolerance which may be secured by the protein poison specific. The sensitization, however, which is developed by a protein is specific, but this is not due to the poisonous group of the protein. The poison elaborated in all infectious diseases is the same. [E. H. R.]

THE FREQUENCY OF PULMONARY COMPRESSION SIGNS IN ACUTE FIBRINOUS PERICARDITIS.

CHRISTIAN, H. H. (*Jour. A. M. A.*, Aug. 10, 1918) from the observation of 53 patients, finds 73.5% (or 39 patients) with definite physical signs are found in the left lower back. These are dulness of varying extent and there is usually bronchial breathing and bronchophony. The signs appear to be the result of compression of pulmonary tissue, that is, atelectasis of the lower lobe. Moderate amounts of pleural fluid are often demonstrated. Compression either from the heart and pericardium or from the pleural fluid, or both, appears to be the main cause. The pulmonary signs exert little influence on the course of the disease and the prognosis. Almost all of the patients recover except those in whom the pericarditis is more or less a terminal event in severe chronic condition. [E. H. R.]

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SURGERY.

PRIMARY CARCINOMA OF THE VERMIFORM APPENDIX.

REIMANN, S. P. (*Am. Jour. Med. Sci.*, August, 1918) finds that the literature contains reports of over 300 such cases. The condition has never been diagnosed clinically before operation. No symptom or symptom-complex other than that of the ordinary acute or chronic appendix has ever been found. The condition may give rise to extension or metastases. Carcinoma may be in the appendix and not discernible in the gross, either *in situ* or in the pathological laboratory. [E. H. R.]

SARCOMA OF THE HEART.

PERLSTEIN, I. (*Am. Jour. Med. Sci.*, August, 1918) presents a very complete paper on this subject. Only 30 cases were found after a thorough search of the literature. There is no clinical picture characteristic of the condition. The symptoms are mostly those of a seriously disturbed cardiac activity. Excessive and repeated hemothorax was the most striking clinical feature of the case reported. Sarcoma of the heart may occur at any age, but is most likely in the most vigorous years of life. Histologically all types have been reported. The spindle celled variety is the most common. The tumor occurs more often in the auricles than in the ventricles and more frequently on the right than on the left. Among post mortem findings, pericardial and pleural effusions and edema are common. [E. H. R.]

SURGERY OF THE GALL-BLADDER AND BILIARY DUCTS.

JUDD, E. G. (*Jour. A. M. A.*, July 13, 1918), in a well-presented article, makes four definite groups of cases and describes the symptoms characteristic of each. He quotes the very interesting work of Mann and himself on animals, with removal of the gall-bladder and on common duct pressure in them and in animals which naturally have no gall-bladder; and, in speaking of the technic of removal of the bladder, emphasizes the great importance of isolating the cystic duct completely before clamping or tying it off, in order to avoid any constriction of or injury to the common duct. He does not believe that a stump or most of the cystic duct if left behind is a source of harm or danger. Dilatation of the common duct is not an indication *per se* for draining it. [E. H. R.]

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OBSTETRICS AND GYNECOLOGY.

THE THERAPEUTIC USE OF RADIUM IN GYNECOLOGY.

CLARK, J. G. (*Surg., Gyn. and Obst.*, June, 1918) definitely states that radium is the treatment of choice in all cases of small uncomplicated myomata in which the only symptoms are hemorrhage. In these cases, as also in cases of myopathic hemorrhage, almost 100% cure may be expected. Sufficient dosage will produce compiete and permanent amenorrhea. Therefore in young women radium should be used with the greatest caution since its application may be followed by premature menopause. Irregular bleeding due to pelvic inflammatory disease, tumors of large size, or tumors of any size complicated by disease of the adnexa, should be treated by operation and not by radium. In no case of uterine bleeding should radium be used without a preliminary curettage and a microscopic examination of the curettings.

In cancer of the female generative organs the author never attempts an operation on any case that has been treated locally by radium, both because of the difficulties of operation following its employment and also because of the distinct danger of starting up into activity a diseased process only partially made quiescent by previous radium. Clark's rule for cancer of the cervix and that of the fundus are directly opposite. In borderline cases of cancer of the cervix he invariably employs radium, but even advanced cases of cancer of the body he always performs a hysterectomy because of the very favorable results in the latter type and the very poor results as regards recurrence or ability to eradicate the disease in the former type. The author claims no cures but much palliation, and believes radium is the method of choice in all inoperable or borderline cases.

[E. H. R.]

THE EFFECT OF DICHLORAMINE-T CHLORINATED EUCALYPTOL SOLUTION ON THE PERITONEUM.

REIMANN, S. P., and MAGOUN, J. A. H. (*Surg., Gyn. and Obstet.*, June, 1918), using drugs experimentally, find that a 20% solution of the above mixture causes clotting of blood and an exudate on gauze and drains and leads to interference with drainage. In the peritoneum it causes a violent irritation with a hemorrhagico-fibrinous exudation. These same results are obtained also by a 7½% solution. The harm to peritoneum is great, the benefits in infected cases are none.

[E. H. R.]

THERAPEUTIC AND PREVENTIVE MEDICINE.

TREATMENT OF MALARIA BY SUBCUTANEOUS INJECTIONS OF QUININE.

PENDE (*Policlinico*, pract. sec., Nov. 4, 1917) reports excellent results in the treatment of severe and obstinate cases of malaria with the hypodermic injection of quinine. The technic is as follows:

The dose is two grammes of quinine hydrochlorate, equivalent to 1.64 grammes of the alkaloid in 250 grammes physiologic saline solution, plus 0.5 cc. 1-1000 solution adrenalin. This solution is injected at body temperature. The injection is made with a hypodermoclysis needle; the part selected for the injection is the anterioexternal part of the thigh where the skin is loose. The liquid is allowed to flow in slowly, it usually taking 10 to 20 minutes for the injection. The injection is made six or seven hours before the anticipated attack, giving a second injection fifteen or twenty-four hours later, and, in the severe cases, waiting only twelve hours. In this manner the patient gets about three grammes of the alkaloid in the course of fifteen to twenty-four hours. No

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more quinine is given for five or six days, then a third injection is given and a fourth five or six days later. A week after the last injection the patient is given 2 to 3 grammes of quinine by mouth daily, three days a week for about two months, and is also given, in the meantime, hypodermic injections of arsenate of iron.

He remarks that the patients bear the hypodermoclysis of quinine well, the urine showing the presence of quinine in about one hour. He believes the adrenalin is the cause of warding off vasomotor collapse after such large doses of quinine.

He records no untoward effects, no albuminuria. The method is a harmless one. In dubious cases he advises two injections at fifteen to twenty-four hour intervals without waiting for a positive diagnosis.

The effect of the treatment is as follows: After the first two injections, in the majority of cases the fever disappears entirely; occasionally, very suddenly. Sometimes in the first or second day following the second hypodermoclysis there is a slight rise, then complete apyrexia. There is a rapid return of the appetite, strength and a general feeling of well-being.

There were no chronic malaria cases, but simply cases of primary and recurring malaria of one or two months' duration. [G. M. B.]

HYGIENE AND PUBLIC HEALTH.

THE MILROY LECTURES ON THE TEACHING AND TRAINING IN HYGIENE: SOME CRITICISMS AND SUGGESTIONS.

KENWOOD (*Lancet*, May 25, 1918), in the three Milroy lectures on the teaching and training in hygiene, discusses the training necessary for non-medical public health workers. Under this heading, he discusses the health visitor and the duties of this office, the existing provisions for training of health visitors, the different functions of the health visitor and nurse, and the results of unsatisfactory training. He makes certain suggestions as to the training of these visitors including the establishing of training centers. He then discusses sanitary inspectors and the duties of this position, the need of individual training and the rôle of women sanitary inspectors. He urges the establishing of museums of hygiene in training centers and that the standards of training and examination for this pupose be raised. [J. B. H.]

PEDIATRICS.

SYSTEMIC MANIFESTATIONS OF CHRONIC NASAL SINUS INFECTION IN CHILDHOOD.

BYFIELD, A. H. (*Jour. A. M. A.*, Aug. 17, 1918) emphasizes the fact that infection of the accessory nasal sinuses is greater than has been commonly suspected, in childhood. Chronic sinusitis has been demonstrated as the cause in many obscure cases of chronic digestive disturbance, persistent cough, occult temperature, asthma, infectious deforming arthritis, cyclic vomiting and general poor health. Symptoms may be wanting, or such symptoms as chronic purulent nasal discharge, sneezing, headache, depression, irritability, suggest the possibility of an infection of this region provided other etiologic factors have been excluded. The diagnosis may be made by x-ray, but even puncture or exploratory curetting may be necessary. Treatment in general is conservative and expectant unless definite indications arise for surgical interference. [E. H. R.]

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MEDICINE.

CHOLEROFORM GASTROENTERITIS SIMULATING POISONING IN AN ALCOHOLIC WITH DEGENERATION OF THE LIVER.

PROF. LESIEUR AND DR. JACQUET (*Le Progrès Médical*, May 18, 1918) cite a singularly interesting case of a soldier 43 years of age who was admitted to the hospital in a state of collapse resembling cholera. According to the history, the evening before he had been to a "farewell" dinner at which several bottles of champagne were consumed. He was apparently in good health after the party broke up, but at about 4 A.M. he was suddenly stricken with a sharp epigastric pain. Profuse diarrhea ensued accompanied by vomiting of blood. In a few hours he became exsanguinated and upon admission he received one-half liter of serum, after which he revived. This state, unfortunately, was of short duration, for he died in a collapse exactly one and one-half hours after admission.

From the general appearance and history the diagnosis of cholera was at first made. But during the one and one-half hours while the patient was in the hospital there was no nausea, vomiting, defecation or passage of urine. Neither was there any terminal hiccough. This negativeness of symptoms caused the diagnosis of poisoning to be made, and that of suicide inasmuch as while the patient was moribund he asked for his papers in his jacket pocket and had some of them destroyed before his eyes and refused to allow his mother to enter the room until the task was completed.

Autopsy revealed congestion of the stomach and intestines, no signs of poisoning, no evidences of cholera infection, but an extreme fatty degeneration of the liver. This was the cause of the death. The patient, it was found, had, two months previously, been under treatment for hepatic trouble due to alcoholism. His urine at that time showed one and one-half gramme per liter of urea excreted instead of 20-25 gm., which is normal.

THE EFFECT OF PHOSPHORUS ON GROWING, NORMAL AND DISEASED BONES.

PHEMISTER, D. P. (*Jour. A.M.A.*, June 8, 1918) finds that phosphorus if given early in fractures during the active period of repair should stimulate callus formation and ossification. In non-union, however, when the natural reparative impulses have been exhausted, little should be expected from its use. Roentgen-ray observations show clearly that phosphorus when given alone has a marked stimulating effect on bone production and consequently of calcium accumulation in the normal zone of growth. During the florid stage of rickets the bony tissues have lost the power of depositing lime salts, and, as phosphorus is presumably unable to restore this power, no appreciable effect from its administration would be detectable by means of the roentgen-ray although it may increase the amount of osteoid tissue. During the healing stage, however, phosphorus should definitely stimulate osteoid tissue. [E. H. R.]

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MEDICINE.

Feeding in Hyperemesis Gravidarum.

Bacon, C. S. (*Jour. A. M. A.*, June 8, 1918) feels that much relief can be obtained by proper management of these cases. Hypodermic, intravenous and rectal feeding should supplant feeding by mouth. By the subcutaneous method, water, salts, glucose, soluble vitamines and sedatives may be given. By the intravenous method, all substances given by the subcutaneous method may be given and especially glucose is valuable by this second method. Rectal feeding is the most practicable and dependable and can be kept up, with proper precautions, until the stomach is well able to take care of food itself. Directions for use are given. [E. H. R.]

What the General Practitioner Should Know about Acute Gonorrhea in the Male.

Wolbarst, G. L. (*Med. Rec.*, June 29, 1918) writes an article full of timely advice. He emphasizes the following important points: First, that most, if not all, acute urethritides sooner or later invade the posterior as well as the anterior urethra. An uncomplicated case should have a well defined period of time in which it ought to be cured, and if this period is unusually delayed, something is wrong either with the treatment or the diagnosis of the location of the disease. Most cases that do not do well are the fault of excessive rather than too little treatment. Acute cases should be watched from day to day and a patient should never be given a syringe and allowed to treat himself during this stage. Argyrol, protargol and permanganate of potassium are the three most valuable solutions, but in what strength and how often they should be used, each practitioner must determine from his own experience and the peculiarities of the individual case. [E. H. R.]

Researches in Rheumatism.

Zintz, W. (*Jour. of Lab. and Clin. Med.*, June, 1918), working on the blood alone, clinically and experimentally finds that in some cases of acute articular rheumatism a micro-organism can be isolated from the blood. The reason why positive blood cultures are not more often found is probably because the bacteria tend to localize in Ashoff's nodules and, except in very virulent form of the disease, are rapidly destroyed in the circulation. The micro-organism isolated by the author resembles a streptococcus and its resistance to drying is particularly remarkable. The author recognizes the great variety of streptococci strains and the difficulty at present of ascribing the cause of the disease to this particular organism. [E. H. R.]

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MEDICINE.

THE ETIOLOGY OF SCARLET FEVER.

PRYER, R. W., and SEWELL, S. (*Jour. of Lab. and Clin. Med.*, June, 1918) summarize their description, in a previous paper, of the organism isolated by them from certain cases of scarlet fever. The first was isolated from the blood of a patient dying of scarlet fever, and the authors have since isolated a similar organism from the throats of those suffering from this disease and this organism closely resembles that discovered by Cantacuzene which produced a condition similar to scarlet fever in monkeys. The authors have made a preparation from cultures of this organism by a method similar to the preparation of typhoidin, which gives a high percentage of skin reactions in scarlet fever convalescents. The probability of a positive reaction with scarlatin, as they call the preparation, increases with the duration of the disease and, in people with no history of scarlet fever, increases with the age of the individual tested. The authors do not claim they have discovered the etiologic factors in scarlet fever, but they think they have presented sufficient evidence to give this organism serious consideration as a possible and probable cause of the disease. [E. H. R.]

THE CHEMOTHERAPY OF LEPROSY AND TUBERCULOSIS.

SUGAI, T. (saka, Japan) (*Am. Jour. Med. Sci.*, July, 1918) finds that potassium cuprocyanide when injected intravenously has an extremely beneficial effect in leprosy. It is probable that a cure might be effected if the treatment were continued from six months to a year. A completely therapeutic effect in tuberculosis in animals has been demonstrated. The animals which received intravenous injections lived longer than those which had no treatment. After eight to ten injections the animals were cured. Potassium cuprocyanide obviously had a favorable effect on tuberculosis in man, including the pulmonary form. [E. H. R.]

ED. NOTE.—In the same number of this journal a more detailed article on the use of this drug is published by Masuda and Matsuda, who give a detailed account of its use and technic of treatment.

PREVENTION OF PNEUMONIA.

COLE, R. (*Jour. A. M. A.*, Aug. 24, 1918) points out the decided difference in etiology in lobar pneumonia and that in broncho- or lobular pneumonia which must be viewed and treated as entirely different entities. Acute lobar pneumonia is due to the pneumococcus while the form most prevalent in army cantonments, and which is also most fatal, is due to a streptococcus infection. With this form, isolation is a most essential factor. Also vaccination is of distinct value. Prevention should be by urging especial precautionary methods in those who are susceptible as in those with measles or any respiratory infection. Early diagnosis and early isolation are measures of greatest value. [E. H. R.]

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AN EXPERIMENTAL STUDY OF PAROTITIS.

WOLLSTEIN, N. (*Jour. A. M. A.*, Aug. 24, 1918) found that cats injected into the parotid gland and testicle with a bacterial sterile filtrate of the salivary secretion of children and adults in the active stage of parotitis or mumps develop a pathologic condition resembling the condition present in mumps in human beings. The injection of filtrates of normal saliva causes only a mild and brief rise of temperature but no leucocytosis and swelling of the glands. The virus of parotitis is most readily detected in the saliva during the first three days of the disease. The virus was also detected in the blood of patients showing marked constitutional symptoms. The serum of recovered cats was found to contain an immune body which diminished or even neutralized the action of the virus of parotitis. [E. H. R.]

EARLY DIAGNOSIS AND INTRAVENOUS SERUM TREATMENT OF EPIDEMIC CEREBROSPINAL MENINGITIS.

HENRICH, N. W. (*Jour. A. M. A.*, Aug. 24, 1918), in a very well presented paper based on the study of 270 cases at Camp Jackson, S. C., states that it is now pretty conclusively proven that this disease is not a primary one in the meninges, but a meningococcic sepsis with a secondary meningeal localization. About 45% of cases were recognized before the meningitis developed. The duration of the stage of generalized systemic infection without meningitis varies from a few hours to many days, but averages about 48 hours. The blood culture is positive in about one-third of the cases in which it is carefully made. Many signs and symptoms point to a widespread infection. Believing that the disease is primarily a blood infection it has been treated as such and most successfully by the intravenous use of from 80 to 1000 c.c. of anti-meningococcus serum. This injection is safe-guarded by the preliminary desensitization of the patient by the subcutaneous injection of 1 c.c. of the serum. Of cases treated by this method 19% died, while in similar cases treated by older methods over 42% died. The article is of definite interest and value. [E. H. R.]

MILITARY MEDICINE.

PNEUMONIA AT A BASE HOSPITAL: EPIDEMIC OF STREPTOCOCCUS PNEUMONIA AND EMPYEMA; PATHOLOGY OF THE EPIDEMIC STREPTOCOCCAL BRONCHOPNEUMONIA IN THE ARMY CAMPS.

These three articles (*Jour. A. M. A.*, Aug. 31, 1918) are based on a large series of cases observed and treated in various army camps, are of the same general nature as similar ones previously reported and add little to the general knowledge on this important subject, but do seem to emphasize points already made which are of distinct value.

[E. H. R.]

SURGERY.

MULTIPLE MYELOMATA AND THEIR ABILITY TO METASTASIZE.

SYMMERS, D. (*Annals of Surgery*, June, 1918) concludes from his study that the so-called multiple myelomata represent neoplasmic growths which spring from myeloblasts and, since the term multiple myelomata is broadly inclusive, the designation of this disease would better be changed to that of multiple myeloblastomata. These are capable of originating growths in the extra-medullary hemopoietic viscera by hyperplasia or pre-existing myeloblastic foci, and in certain other tissues by the process of metastasis by cell transplantation.

[E. H. R.]

Current Literature Department.

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MEDICINE.

FURTHER EXPERIENCES IN COLONY TREATMENT AND AFTER-CARE.

VARRIER-JONES AND WOODHEAD (*Lancet*, Aug. 3, 1918) discuss the colony treatment and after-care of consumptives. They discuss the causes of relapses among consumptives in the laboring classes. As a temporary expedient the sanatorium treatment seems to give excellent results, and as a means of permanently restoring the patients to health they were of the opinion that it has proved to be a failure. Something more is needed, and that something is what is now known as after-care.

Two factors in preventing these relapses and in making sanatorium treatment effective are, first, economic, good housing; sanitary dwellings, proper food, rest, and employment; and, second, increasing the bodily resistance. The first can be made to a certain extent, but it is hard to see how resistance among the laboring classes to tuberculosis has been raised to even a small extent. They emphasize the need of controlling the source of massive infection; it is, of course, the care of the advanced bedridden case. They discuss the proper function of the dispensary. It is not the proper function of the dispensary to see the greatest number of patients in the shortest possible time; it should be the number of patients who are examined thoroughly and whose cases are gone into carefully that counts. They discuss the problem of giving a large number of consumptives the opportunity to carry on their usual or other vocation under conditions carefully controlled by competent medical authority.

They take the example of the tuberculous ex-soldier and discuss the colony at Papworth, where discharged tuberculous soldiers and ex-sanatorium patients are given care and training. They have at this colony families whose bread-winners are consumptives with tubercle bacilli in their sputum, who by means of a State subsidy—a pension,—are carrying on their original trade under ideal conditions—happy, contented, and earning their own livings. Its best feature is the shielding of the patient from the keen competition of the outside world.

It is by the modification of such colonies as this that the problem of the discharged sanatorium patient and the chronic consumptive will be solved.

[J. B. H.]

COLONIES FOR CONSUMPTIVES.

BARDSWELL (*Lancet*, Aug. 3, 1918) discusses two types of consumptive colonies. One provides for an institution for the exclusive reception of the early and most curable cases, with a view to giving them prolonged treatment and training in some agricultural employment. These colonies are usually linked up with a sanatorium. After some 12 to 18 months of such treatment as this, the patient is usually able to return to his own home and to his own ordinary life and employment. The second scheme is more

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comprehensive in scope, as it makes provision for all kinds of cases irrespective of the extent and character of their disease. Thus it comprises, under the same administration, a sanatorium, a hospital for advanced cases, and a colony as in the first scheme for vocational training. The latter, however, is not limited to the most favorable cases, but is offered to every patient who desires it and who has a prospect of some degree of restoration of working capacity.

The colony seeks to establish trades and industries which, by offering remunerative employment under favorable conditions, will not only give scope for re-education but will encourage the permanent settlement in the neighborhood of the colony of ex-patients and their families, thus forming the nucleus of the community living under the healthy conditions of a garden city.

Many sanatoria present striking examples of the efficacy of the suitable employment under favorable conditions among their personnel. He mentions two sanatoria, where at one over 50% and at the other over 70% of the employees are made of former patients who are all earning their livelihoods. He gives the experience of six existing colonies in England, and discusses their financial aspects. It is probable that these colonies will achieve more in virtue of the prolonged treatment they will give than as the result of their facilities for vocational training. With regard to agriculture, it is the general experience that farming operations are too skilled and too arduous to be suited to many patients, although they are admirably adapted for treatment of the more robust.

This and the preceding article are full of practical interest and value. [J. B. H.]

THE DIAGNOSTIC SIGNIFICANCE OF HEMOPTYSIS.

GLOVER (*The Practitioner*, August, 1918) discusses the general subject of hemoptysis, quoting from various observers and writers on this subject.

He presents the details of the after-history of 615 cases of phthisis he followed for five years after leaving Brompton Hospital. Of those cases with positive sputum, 52% of those who gave a history of hemorrhage are dead after five years, and 56% of those who did not have a hemorrhage have died. On the other hand, of those with a negative sputum 17.6% of those with hemorrhage have died, and only 10.9% of those without a hemorrhage are now dead.

In regard to the size of the hemorrhage and its relation to mortality, the largest percentage of deaths was among those with a medium sized hemorrhage. He believes that the importance of small bleedings among non-bacillary consumptives is practically nil as far as ultimate mortality is concerned, and that no great stress need be placed on the history of blood-streaked or bloody sputum.

He takes up the occurrence of blood spitting in non-tuberculous cases, the blood coming from the smaller air passages and lungs, secondary to gross disease elsewhere, and blood occurring in hysteria, menstruation or unknown causes.

He believes that many cases are diagnosed wrongly as tuberculosis on the strength of hemoptysis, but also that many cases of hemoptysis really due to tuberculosis may heal with such rapidity as to discount largely the diagnostic importance of a history of bleeding. These latter cases he classifies as hemoptyses in benign tuberculosis.

He summarizes his opinions thus:

Briefly the significance of hemoptysis is as follows:

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While slight hemoptysis is one of the commonest forms of bleeding in pulmonary tuberculosis, non-tuberculous hemoptysis is also most commonly slight. The number of slight non-tuberculous hemoptyses is very large, and, in any case, even when a tuberculous lesion is the cause of bleeding from the lung, rapid arrest often occurs.

When the signs are as a whole of doubtful import, it is an open question whether a slight hemoptysis is indicative of active disease or not, or, for that matter, whether it is indicative of tuberculosis at all. On the other hand, when a moderately large or a severe hemoptysis takes place and *other gross causes are excluded*, the probabilities are that the lesion is tuberculous and, in most instances, actively evolutive, the exceptions being cases of rapidly healing or "abortive" tuberculosis. This, however, cannot be ascertained without the employment of specific methods of investigation either by serum reactions or by the use of subcutaneous doses of tuberculin, and, until some such methods of examination are adopted, an open mind must be maintained. Hemoptysis does not contraindicate test injections but is an indication for careful dosage. [J. B. H.]

SURGERY.

CYSTS AND PSEUDOCYSTS OF THE PANCREAS.

KERR, A. A. (*Surg., Gyn. and Obstet.*, July, 1918), in a short, concise article, gives a very readable differential diagnosis survey of this condition. It is very well done for so short an article. [E. H. R.]

THE PRESENT STATUS OF THE SURGERY OF THE BILE TRACT.

BEVAN, G. D. (*Surg., Gyn. and Obst.*, July, 1918), in an article not suited for abstracting in brief, gives an excellent statement of our present day knowledge of the biliary tract and indications for surgical and other therapy. The article is concise and thorough. [E. H. R.]

THE RELATION OF GASTRIC ULCER TO CANCER.

EWING, J. (*Annals of Surgery*, June, 1918), from a clinical and autopsy study, is forced to conclude that cancerous transformation of peptic ulcer is rather infrequent and probably does not exceed the incidence of 5% originally established. [E. H. R.]

CAUTERY EXCISION OF GASTRIC ULCER.

BALFOUR, D. C. (*Annals of Surgery*, June, 1918), in an article beautifully illustrating his technic, concludes that the cautery efficiently destroys the focus of infection in gastric ulcer without sacrifice of nature's protective induration surrounding the ulcer crater. It may be applied in a large percentage of gastric ulcers and entails a minimum of operative risk. Clinical and roentgen evidence show better motility and function than follow knife excision and gastro-enterostomy. It is particularly efficient in obviating early and late post-operative hemorrhage. The late results are better than those obtained by any other method. It can be used in cases in which no other means of direct attack is justifiable. It is probable that cautery excision, as knife excision, should be followed by gastro-enterostomy. [E. H. R.]

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CONGENITAL VARIATIONS IN THE PERITONEAL RELATIONS OF THE ASCENDING COLON, CECUM, APPENDIX, AND TERMINAL ILEUM.

HARVEY, S. C. (*Annals of Surgery*, June, 1918), in a very thorough and well-illustrated article of 45 pages, discusses the origin and importance of these variations in a logical and interesting manner. The article is not suited to abstracting but is of interest to the general practitioner and surgeon. An excellent bibliography is appended. [E. H. R.]

OPHTHALMOLOGY.

THE RELATION OF HEREDITARY EYE DEFECTS TO GENETICS AND EUGENICS.

HOWE, L. (*Jour. A. M. A.*, June 29, 1918) writes a long and interesting article on this subject, not suited for abstracting but of decided interest to those interested in ophthalmology. The defects most commonly found as hereditary traits transmitted especially by the male members of certain families are optic atrophy, color-blindness, night-blindness and certain muscular defects. Other less common anomalies are degeneracy of the cornea, pigmentary degeneration of the retina, displacement of the lens, etc. The author believes that case histories should always be searched for hereditary defects and that the relation to eugenics is definite. [E. H. R.]

PEDIATRICS.

THE SUPERIOR LONGITUDINAL SINUS IN INFANTS: ITS VALUE IN TRANSFUSION AND FOR RAPID MEDICATION; ITS ADAPTABILITY FOR PROCURING BLOOD FOR DIAGNOSIS.

FISCHER, L. (*Med. Rec.*, Sept. 7, 1918) describes the technic of the use of the superior longitudinal sinus for transfusion, withdrawal of blood or for medication and emphasizes the safety, ease of accomplishment and desirability of this method in infants. The article is of interest to those who are not familiar with this technic. [E. H. R.]

PATHOLOGY.

LOCAL NECROSIS OF THE ADRENAL GLAND: WITH REMARKS UPON ACUTE ADRENAL INSUFFICIENCY.

MASCHOCOWITZ, E. (*Am. Jour. Med. Sci.*, September, 1918) describes in detail the pathological findings in two cases autopsied. He then describes the clinical picture and refers to cases from the literature and to experimental acute inflammatory lesions of the adrenal, describing the variety of lesions associated with various infections, and methods of determining adrenal insufficiency. [E. H. R.]

SIDELIGHTS ON MULTIPLE MYELOMA.

MYER, A. W., AND SWAIN, R. E. (*Am. Jour. Med. Sci.*, September, 1918), in a very thorough and interesting article on this subject, give a wealth of detailed knowledge acquired from a most complete necropsy study of a very pronounced case. Every bone of the body was examined and pathological study made of cut sections from each. The report is most thorough and adds facts of value to the pathology of this disease. [E. H. R.]

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MEDICINE.

BLOOD PRESSURE IN AMYLOID DISEASE OF THE KIDNEY.

HIROSE (*Johns Hopkins Hosp. Bull.*, August, 1918) discusses the general subject of blood pressure in amyloid disease of the kidney to present his own investigations based on 59 cases of this condition, and summarizes his work as follows:

1. In a series of 59 cases the presence of amyloid in the kidneys has always been associated with chronic nephritis. It is impossible to determine whether the nephritis antedated the amyloid or was developed coincidentally with it. In 40 cases in which measurements were given, the kidneys were larger than normal, while in nine they were small and granular.
2. In all but one of the 15 cases in which the blood pressure was recorded it was found to be normal or below normal. In the one case in which the systolic pressure was 170 mm., the kidneys were rather large and there was no cardiac hypertrophy.
3. Of the 59 cases, 10 showed cardiac hypertrophy, but only one of these was associated with small, granular kidneys, and in none was high arterial tension noted. [J. B. H.]

EXPERIMENTAL MENINGOCOCCUS MENINGITIS.

AUSTRIAN (*Johns Hopkins Hosp. Bull.*, August, 1918) describes his work, in considerable detail, on experimental meningococcus meningitis, and comes to the following conclusions:

1. The cerebrospinal canal can be infected by way of the blood stream.
2. Though under normal conditions the presence of a bacteriaemia does not lead to the development of meningitis, when a condition of hyperemia of the thecal vessels exists, meningeal inflammation may result.
3. Neither when normal conditions are present nor when meningeal irritation has been induced do meningococci introduced into the nasal mucous membrane gain access to the meninges.
4. The demonstration of meningococci in the nasal secretion is to be interpreted as evidence of the excretion of these organisms by this route, but the conclusion is not necessarily warranted that they find a direct portal of entry to the meninges by the same channel.

These observations seem important from an etiological standpoint. They indicate the probability that epidemic cerebrospinal meningitis, as it occurs in man, is to be regarded as a metastatic disease developing in the course of a general infection rather than as the evidence of a primary local disease. They do not necessarily indicate the portal of entry of the invader, nor antagonize the view that the cocci are taken into the body through the upper respiratory tract, a fact apparently established.

The observation that meningococcal sepsis in rabbits is followed by the development of meningeal disease only when the meninges are not in a normal state is suggestive and may explain, in part, at least, the occurrence of the disease in some of those exposed and its failure to develop in others in like contact with sources of infection. [J. B. H.]

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CERTAIN CLINICAL ASPECTS OF PEPTIC ULCER WITH SPECIAL REFERENCE TO ROENTGEN-RAY DIAGNOSIS AS OBSERVED IN A STUDY OF 743 CASES.

BAETJER AND FRIEDENWALD (*Johns Hopkins Hosp. Bull.*, August, 1918), in a useful and important article, discuss the diagnosis of gastric and duodenal ulcer by the clinical as compared with the x-ray method. The 743 cases upon which they base their findings they divide into three groups as follows:

Group 1. Cases in which there was an operation and in which the diagnosis was definitely proven. There were 185 of these cases.

Group 2. Cases which presented such typical clinical symptoms as well as positive x-ray signs of peptic ulcer that the correctness of the diagnosis was positive. These cases numbered 323.

Group 3. Somewhat doubtful cases which presented many of the signs and symptoms of ulcer, but lacked some important signs. In the larger number of these cases the x-ray findings were quite definite. There were 235 of these cases.

Of the 185 cases in the first group in which the diagnosis was verified by operation, x-ray confirmed the diagnosis in 79.4%; of the remaining 38 cases (20%) nothing abnormal was revealed in 7 instances; in 21 the diagnosis of gall bladder adhesions was made; in 5 of chronic appendicitis and adhesions; and in 5 the picture suggested enteroptosis.

Of the second group of 323 cases where the clinical evidence was unmistakably positive, x-ray findings were obtained in 84%. Of the remaining cases no abnormality was discovered in 12 instances; while in 29 the diagnosis of gall bladder adhesions or of chronic appendicitis was made.

Of the third group of somewhat doubtful cases, 235 in number, the x-ray findings were unmistakable in 89.7%.

The writers take up the differential diagnosis, from the x-ray point of view, between gastric ulcer and gastric carcinoma, the two important points to be taken into consideration.

1. *Peristalsis.* In ulcer there is always hypermotility with a spasm of the pylorus and more or less retention of contents. In carcinoma, unless there is obstruction, there is always hypermotility with rapid evacuation of contents.

2. *Position.* Ulcer is generally observed on the lesser curvature near the pylorus, although it may occur on the greater curvature and is frequently found in the duodenum. Carcinoma may occcur in any part of the stomach. The invasive lesions are more frequently seen on the lesser curvature near the pylorus and less frequently on the greater curvature. The massive growths are more generally seen on the greater curvature.

They summarize their work as follows:

1. The x-ray offers most valuable assistance to the diagnosis of peptic ulcer, and, although this method is not yet sufficiently developed to be relied upon alone without entering into the clinical aspects of the disease, it is of the greatest diagnostic help in obscure cases.

Positive x-ray findings are noted in about 84% of cases of peptic ulcers and in 79% of cases operated upon.

2. In duodenal ulcer there is excessive hypermotility of the stomach with rapid evacuation of the contents, so that the greater portion is extruded within the first half hour; there is hypermotility of the duodenum with formation, usually, of a deformity which remains fixed in all of the examinations.

3. The diagnosis of gastric ulcer is dependent upon two conditions, namely, the functioning of the stomach, and the finding of the filling defect. It is only when the filling defect is situated along the anterior surface of the stomach and along the anterior

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surface of the lesser and greater curvatures that it can be demonstrated. On the other hand, it matters not what the situation of the ulcer is, the functions of the stomach are materially affected. We have in this condition an excessive irritation from the ulcer, with consequent hypermotility and a spastic condition of the pylorus, so that, for the time being, there is practically no expulsion of bismuth. It is only when the spasticity relaxes that a portion of the bismuth is expelled. In gastric ulcer, wherever its situation, we can always look for a certain amount of retention of contents. There is always a more or less marked hourglass formation. According to our observations, the functional signs are often as important as the presence of the filling defect in arriving at definite conclusions inasmuch as in 8% of our cases, although there were no defects found, the functional changes pointed definitely to ulcer.

4. The greatest difficulties arise in the diagnosis of complicated cases; that is, when adhesions are present. These so frequently mask the usual findings that it is often impossible to determine whether there is really an ulcer of the stomach at hand or a lesion of some other organ. When the ulcer is situated at or near the pylorus, signs of partial obstruction frequently aid in establishing the diagnosis.

5. The x-ray affords an almost absolute means of differentiating between gastric and duodenal ulcer.

6. By means of the x-ray examination we can generally rule out the presence of ulcer.

7. We can approximately determine the degree of healing as well as recurrence of an ulcer which cannot be as certainly determined in any other way.

8. One can obtain sufficient evidence as to the extent and indurations of the ulcer and degree of obstruction to guide us, in a measure, as to the necessity of surgical intervention. [J. B. H.]

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MEDICINE.

THE PROGNOSIS OF TRENCH NEPHRITIS.

DYKE (*The Lancet*, September 7, 1918) discusses the general subject of trench nephritis and prognosis in this condition. As to the influence of age in prognosis in his cases, it was very evident that the older the patient less was the chance of complete recovery. Edema usually disappears during the first week. Its persistence after the second week renders the prognosis increasingly unfavorable, and its presence after the end of the first month indicates that restoration to health will be incomplete.

In regard to albuminuria, the continuance of this condition after the end of the third month from onset, renders the prognosis as regards restoration to complete health unfavorable.

In regard to etiology it is evident that the condition is proportionately commoner among troops, the greater the exposure their work entails, and that the liability to this condition increases with age. He believes that the most valuable line of research as to the causation of this condition will be on the restoration of metabolism, produced by fatigue, the bodily state produced by exertion, lack of sleep and exposure. [J. B. H.]

MEDICAL-INDUSTRIAL RELATIONS OF THE WAR.

EDSALL (*Johns Hopkins Hospital Bulletin*, September, 1918) in an address before the Johns Hopkins Hospital Medical Society, discusses the general subject of industrial medicine and its relation to the present war. It is impossible to review this article adequately. It is, nevertheless, full of interest and value to every practitioner.

Dr. Edsall makes an urgent plea that physicians and medical schools devote more time and study to the broader aspects of medicine and the prevention of disease than is now the custom. [J. B. H.]

SURGERY.

TOOTH IMPACTED IN A SECONDARY BRONCHUS OF THE LEFT LUNG; REMOVAL BY LOWER BRONCHOSCOPY AFTER TWO UNSUCCESSFUL ATTEMPTS BY UPPER BRONCHOSCOPY.

THOMSON (*The Practitioner*, August, 1918), in a long and elaborate article, describes the details of the case mentioned. There are illustrated plates and diagrams.

The two attempts to remove the foreign body by upper bronchoscopy, in other words, by instrumentation through the mouth, failed. The third attempt, by doing tracheotomy, was successful. He believes that the advantages of the latter method by means of a tracheotomy are very manifest and may be summarized as follows:

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1. Less anxiety with the anesthetic, for we all know the administration through a tracheotomy opening avoids all pharyngeal and laryngeal reflexes and is, therefore, much smoother and safer.

2. Ability to succeed without several trained assistants, because there is no longer the necessity to immobilize the head.

3. The use of a wider and shorter tube, thus obtaining better illumination.

5. A larger field of vision, and

6. Increased facility of manipulation.

7. Less leverage and traction on the important structures at the root of the lung.

8. Shorter sitting.

9. Greater certainty in result.

10. In the event of failure or of the foreign body shifting its position during the séance, the tracheotomy is a decided security.

He quotes Jackson in the following seven "dont's" to be borne in mind in doing this and similar operations:

1. Do not reach for the foreign body with the finger, lest the foreign body be thereby pushed into the larynx or the larynx be thus traumatized.

2. Do not make any attempt at removal with the patient in any other position than recumbent with the head and shoulders lower than the body.

3. Do not hold up the patient by the heels, lest the foreign body be dislodged and asphyxiate the patient by becoming jammed in the glottis.

4. Do not fail to have a radiograph made, if possible, whether the foreign body in question is of the kind dense to the ray or not.

5. Do not fail endoscopically to search for a foreign body in all cases of doubt.

6. Do not pass an esophageal bougie, probang or other instrument blindly.

7. Do not tell the patient he has no foreign body until after a radiography, physical examination, indirect examination and endoscopy have all proven negative. [E. H. R.]

GUNSHOT WOUNDS OF THE KNEE JOINT WITH SEPTIC ARTHRITIS.

NEVE (*The Lancet*, September 14, 1918) reports on 86 cases of septic arthritis on the knee. He summarizes his experiences and suggestions as to the treatment of this condition as follows:

1. In the earliest stages of infective traumatic arthritis an attempt should be made by tapping and distending the joint with some antiseptic, such as flavine or iodoform emulsion, to abort the sepsis. This is being successfully done in France. Good fixation of the limb is essential.

2. When sepsis is established *thorough* drainage is essential; anterior lateral incisions do not suffice; the Peck method is not successful. Suprapatellar, antero-lateral and postero-lateral incisions should be used in combination.

3. If there is some bone damage excision is desirable in most cases, and the bone surfaces may be kept apart.

4. Carrel's method offers the only effective way of introducing an antiseptic fluid into the recesses of the injured joint.

5. With other methods burrowing of pus very frequently occurs, with abscesses tracking up and down the limb and septic absorption; and amputation is apt to be performed too late, when the vital powers have succumbed to the prolonged strain and sepsis has become generalized with a perhaps fatal result. [J. B. H.]

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SURGERY.

METHODS OF CONTROL OF FRAGMENTS IN GUNSHOT WOUNDS OF THE JAWS.

PICKERELL (*The Lancet*, September 7, 1918) lays down the following general principles in the treatment of fragments in gunshot wounds of the jaws:

1. That there is, or should be, no best method of controlling fragments. Each case should be treated individually, according to its requirements.

2. Control and not absolute immobilization of the fragments should be the aim of any method of treatment.

3. The utilization of function and perhaps slight mobility of the fragments from as early a time as possible is the best stimulus to union.

4. A conservative line of control should be adopted wherever possible, *i.e.*, loose teeth and small fragments should be retained and controlled with function rather than be sacrificed to obtain possibly a quick but inferior result. This is in accord, I think, with the trend of orthopedic surgery at the present time. [J. B. H.]

THE TREATMENT OF WOUNDS.

MORRISON, HARTLEY & BASHFORD (*The Lancet*, August 24, 1918) discuss the treatment of wounds by various methods:—Carrel-Dakin, dichloramine, flavine and hypertonic saline solutions. They present the following conclusions:

The dichloramine-T oil method of wound treatment is simple of application, and the claim is substantiated. The results, even when judged by modern standards, are not to be disregarded.

Dichloramine-T oil is not indifferent to granulation tissue or to the skin edges of wounds, but has, especially if used for a long time, a deleterious action on both. The ingrowth of skin is retarded, and the natural tendency for granulation tissue to disorganization is aggravated.

The use of an oily menstruum does not altogether prevent the adhesion of dressings to the surface or obviate the repeated, if minute, insult to the tissues inseparable from each dressing.

Though an improvement on some other methods in vogue, dichloramine-T oil has not yielded the improvement on Dakin's solution that was anticipated, perhaps because it is neither innocuous to healthy granulation tissue, nor a solvent of dead tissue; perhaps, possibly, because an oily application is not so efficacious as a watery solution in the treatment of wounds. [J. B. H.]

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SURGERY

FRACTURES IN WARFARE

LANE (*The Practitioner*, October, 1918) divides fractures in warfare into three groups: simple fractures, compound fractures not produced by projectiles, and compound fractures produced by projectiles. The conclusions that may be arrived at as to the operative treatment of fractures produced by projectiles, to which he very largely confines himself in this article, he gives as follows:

1. That only in very exceptional circumstances is it advisable to fix fragments of broken bones together by means of plates and screws while the wound is foul.

2. That if, for certain reasons, such a procedure is deemed necessary, screws should not be inserted near the broken extremities, but as far from the seat of fracture as possible.

3. That it is advisable to postpone operative interference till the wounds have healed for some considerable time and until the tissues are, in all probability, free of organisms. This can usually be determined with reasonable certainty.

4. That if any apparently septic focus is observed during an operation, a culture and a vaccine should be obtained from it, and employed at once should symptoms of infection of the wound develop.

5. That, should there be any definite suspicion of the presence of latent sepsis, irrigation by Carrel's or similar method must be adopted at once. If not, the wound should be closed completely at the time of operation.

6. That every attempt should be made to avoid any shortening of the limb, or to reduce it to a minimum.

7. That the apposition of the whole areas of the broken ends is not necessary, since the interval will fill up subsequently by bone if suitable means are adopted. Fragments of bone or callus should be saved and employed to fill any interval between the pieces of the shaft.

8. That much heavier steel plates are required in this class of case than are usually employed in the less comminuted fractures of civil life. It is most important that the muscles and joints, which are in relation with the fractured bone, shall be moved voluntarily by the patient as soon as possible after the operation, in order to avoid that stiffness and limitation of movement that so often complicate these fractures. This is especially the case in the joints of the knee, ankle, and foot. In order to obviate this trouble, without risking the security of the junction, the plates which are employed to retain the fragments in position must be as long and as strong as circumstances will permit. They should be secured by as many screws as possible. The plates that are often employed are quite inadequate for the purpose. It is obvious that such early treatment cannot be adopted when the fragments are very fragile and the grip of the plate and screws insecure.

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9. That providing no strain shall be exerted on the junction likely to develop non-union, the sooner the patient who has been operated on for fracture of one or more long bones of the leg is got up and about, the more bones will be deposited and the more rapid will be the repair at the seat of fracture. For this purpose a good ambulatory splint is a necessity in certain cases.

10. That, should the interval between the fragments be so considerable that union is not likely to take place, even after prolonged congestion, brought about by the use of an ambulatory splint, the fragments should be secured in perfect alignment by a plate fixed vertically behind the centre of the shaft. When this has been done a portion of one of the fragments, which is usually equal in thickness to a third of the total circumference of the shaft, can be sawn and chiselled off and secured over the interval between the fragments, any piece of bone removed to accommodate the graft in the other fragments being fitted to occupy such existing interval as may be left between the bones. If enough material cannot be obtained from the fractured bone to make a graft, it must be got from some other bone.

11. That most of the failures of bone grafting for extensive loss of substance are due to the surgeon depending on the unsatisfactory grip which the graft alone can be made to exert upon the fragments of the shaft. The essence of success depends on the absolute immobilization of the fragments of the shaft on one another, and of the graft upon those fragments. It is obviously ridiculous to attempt to retain the fragments of bone in a useful position by bone grafts alone in these compound fractures produced by projectiles, as it is in any fracture in which the material securing the fragments in position has to bear considerable strain. In grafting bone into gaps in the lower jaw, fixation is supplemented by interdental splints which lock the jaws.

12. That much has been written about wire screws and plates acting as foreign bodies if used in simple fractures, and producing a rarefying ostitis around them. Should such rarefying ostitis exist, it is undeniable evidence that the technique of the operator is faulty and not the procedure. The remedy is in the hands of the surgeon, who must improve his methods. Frequent failures in unskilled hands have led many to attribute their want of success to the employment of steel plates and screws, and to attempt to avoid sepsis by using other and much less effective means.

13. That while the operative treatment of compound fractures produced by projectiles is the most important of all surgical procedures in warfare, it is, perhaps, well to remember that it may demand a degree of asepsis, mechanical skill, resource and judgment in excess of that required for other operations for war conditions.

14. That, besides that of sepsis, usually introduced from without though occasionally developed from a latent infection, hemorrhage is the chief risk which is associated with these operations. This can be best avoided by the use of very powerful hemostatic forceps, which are left in position in the wound for as long as possible during the course of the operation. A ligature is rarely required. It is most important that the wound should be left as dry as possible. When much oozing is expected to follow the operation, a long drainage tube may be left in the wound for twenty-four hours, and so arranged that the extravasated blood may be carried free of the dressings. The removal of the tube does not necessitate any change of dressings, for they are not moistened by the blood. [J. B. H.]

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MEDICINE

Scurvy

O'Shea, (*The Practitioner*, October, 1918) bases his observations on scurvy from personal experience of at least 400 cases. In regard to etiology, he believes strongly: (1) that the previous health of the individual is an important predisposing factor, and influences the severity of the disease, and (2) the causative factor seems to be to a large extent the lack of fresh vegetables in the diet. Among the clinical signs and symptoms he describes first the condition of the gums, which are anemic, spongy and tender. If this condition is neglected, ulceration may take place. Another striking feature of this disease is the great tendency to hemorrhage into various parts of the body. It is perfectly possible, however, to have scurvy without such hemorrhage. He describes in detail the location and appearance of these lesions. Pain may be a first symptom of hemorrhage, but it may occur independently of any bleeding. Very often the patient complains of pain all over the body. Edema is quite common in severe cases. Fever is usually mild. [J. B. H.]

The Tuberculosis Problem.

Ward (*The Practitioner*, September, 1918,) believes that as far as England is concerned, at least, certain radical changes should be made in the present methods of handling the tuberculosis problem. He summarizes these under four headings as follows:

1. The problem should be attacked first and mainly from the preventive side, the authorities endeavoring to lessen the disease as a whole, instead of concentrating attention on the welfare of each individual patient.

2. A serious attempt should be made to improve the present sanatorium results by modifying some of the lines of sanatorium treatment.

3. Changes in the central tuberculosis administration should be made.

4. Energetic search should be made for fresh methods of treating the disease.

He believes that too much attention is paid to the individual and to curing that particular individual than toward preventing the disease itself. Tuberculosis must be treated as an infectious disease like scarlet fever and smallpox and treated carefully. The mind of the public, he believes, is now prepared for compulsory isolation of dangerous infective cases. Along with this, the housing problem must be taken up more energetically and infected houses cleaned up. The present dispensary system does not go sufficiently into details. Not only must the patient be seen and followed up from time to time, but the patient's home must be carefully investigated and contacts examined. In regard to the curative side he makes the most interesting suggestion that our patients are being chilled too much by our modern vigorous sanatorium regime.

(It is interesting to note, in view of this, that at our largest out-door school for tuberculous children in Massachusetts, at the Westfield State Sanatorium, Dr. H. D. Chadwick, the superintendent, is firmly of the opinion that the temperature should not be allowed to go below 35 degrees. J. B. H.)

Likewise he makes the important suggestion that not only physical rest but mental repose is essential. This article is of distinct value. [J. B. H.]

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BLOOD PRESSURE MEASUREMENTS.

KILGORE (*The Lancet*, August 24, 1918) discusses the technic of blood-pressure measurements with illustrated cases. The importance of blood-pressure in functional diagnosis and the relative value of systolic, diastolic and pulse pressure. He summarizes his opinions on this subject as follows:

Experience has shown great practical clinical value of blood-pressure measurements in connection with a limited number of conditions—namely, arterial and renal diseases, cerebral pressure, pregnancy toxemias, Addison's disease, and, to less extent, aortic insufficiency. Before attributing pathological significance to the measurements, however, wider normal limits (both systolic and diastolic) should be recognized than those generally indicated in the books. Figures from normal young adults are presented in substantiation of this statement. An important and little known application of the blood-pressure apparatus is its use in the detection of pulsus alternans. It is urged that systolic pressure be retained as the most important measurement, and that the simple palpatory technic be used.

Blood pressure determinations in general have fallen short as clinical indicators of circulatory function. Pulse pressure, and consequently the various formulas in which it is involved, depends upon too many factors to be a very useful index for any of them. Great variation is shown among pulse-pressure measurements of normal persons. The same criticism is shown to be applicable in the case of the auscultatory "tone-phases." [J. B. H.]

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NEUROLOGY.

THE TREATMENT OF SHELL SHOCK IN AN ADVANCED NEUROLOGICAL CENTRE.

BROWN (*The Lancet*, August 17, 1918) discusses from a general point of view his experiences in dealing with between two and three thousand cases of psychoneurosis from November, 1916, to February, 1918. Seventy per cent. of these he was able to return to the line after an average of a fortnight's rest and treatment in the hospital. The immediate factors in bringing about permanent cure of these cases are: (1) Persuasion, whereby the patient is rationally convinced of the true nature of his condition; and (2) the sthenic emotions of confidence, conviction, and expectation, which have a unifying effect upon the mind, and counteract the disintegrating effect of mechanical suggestion.

He discusses cases of delayed onset of symptoms, the emotional origin of symptoms and treatment. He uses the term abreaction, which means the working off of repressed emotion. General hygienic measures are, of course, necessary in the after-care of severe cases. Regularity is insisted upon in all habits, alimentation, excretion, sleep and exercise. Patients are put on physical drill and sent for short route marches. Many do light duty in the wards or in the grounds of the hospital. But to the "gospel of work" is added the gospel of cheerfulness and hope.

He summarizes his experiences and opinions as follows:

"The essential therapeutic agent in the case of *hysteria* caused by shell shock is 'abreaction,' or the working off of the repressed emotion caused by the shock. Mental analysis is a means to this end, and light hypnosis, applied under proper safeguards, is the quickest and most effective method of effecting this analysis, where amnesia is present and the case is seen early.

For cases of *neurasthenia*, which are the more numerous and involve emotional preoccupation often dating back many years, mental analysis and re-education, without hypnosis in any form, are the needful agents, although the abreaction of the original emotional disturbance or disturbances is again essential.

In both classes of cases the arousing of *sthenic* emotion in the patient's mind is an important adjunct in the cure, both in the form of enthusiastic confidence in his doctor and expectation of a complete recovery, and also in the form of vivid interest in some form of occupation in the stage of convalescence, during which the mind becomes more unified and consolidated.

I have hitherto not mentioned *rest*, which is, of course, also fundamental. But no complete rest is possible while the mind is obsessed with bottled-up emotion. This emotion must be completely worked off, and then the true rest will come. The pre-occupations of the neurasthenic also must first be dealt with if any form of rest cure is to produce good results.

After three and a half years of work with nerve patients in the military hospitals in Egypt, England, and France, during which over 4,000 cases have passed through my hands, I feel no hesitation in

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saying that mental analysis is the ideal method of treatment, provided that it is carried far enough to produce true abreaction of emotional states. As an aid, and as a sort of short cut, the special form of hypnosis which I have described is very useful in early cases showing major hysterical symptoms." [J. B. H]

PATHOLOGY.

ETIOLOGY AND TREATMENT OF PRURITUS ANI; SUMMARY OF EIGHT YEARS ORIGINAL RESEARCH WORK.

MURRAY, D. H. (*Jour. A. M. A.*, Nov. 2, 1918) presents a paper which deals with this obscure subject in an entirely new manner. He feels justified after his research work in stating that this condition is caused by an infection made by one of the streptococci group or one associated with it. The infection may be the primary, secondary or aggravating cause. Whether the infection occurs because the opsonins for streptococci are low or whether the opsonins are lessened because of the invading organism is not yet known. About 10% of all rectal cases complain of pruritus. Pruritus vulvae and pruritus scroti are also proved to be skin infections. Pruritus ani will not be improved unless the phagocytic power of the blood is increased and the pruritus will return if the phagocytic power of the blood is again lowered enough to allow a reinfection. Vaccines are of decided value in the treatment of this condition. They should preferably be autogenous. The only possible means of prevention lies in bathing the anal skin after each defecation. [E. H. R.]

ETIOLOGY OF THROMBOANGIITIS OBLITERANS.

MEYER, W. (*Jour. A. M. A.*, Oct. 19, 1918) presents a very interesting and suggestive paper on this obscure subject. On the basis of extensive clinical observation and a variety of laboratory examinations, several new features of this disease are presented. Clinical analysis of the blood of the patients shows that there is no retention of waste nitrogenous constituents. There is no marked decrease in the alkaline reserve of the blood, as demonstrated by the carbon dioxid combining power of the blood plasma (Van Slyke's method), but in all cases so far studied the ingestion of 100 gm. of glucose after a brief fasting period, has produced hyperglycemia. This observation shifts the whole question of the etiology of the disease to a new ground and the old designations appear no longer appropriate. The author suggests for the present naming the disease "glycophilia." The similarity to the name "hemophilia" is intended to point to sex limitation (males alone being affected) and to other obscure features of the disease.

The concentration of sugar in the blood of fasting normal individuals varies from .08 to .10 per cent. When 100 gm. of glucose are ingested, the sugar concentration of the normal individual does not rise above 15 per cent. at the end of one hour, and by the end of the second hour has returned to normal or to a somewhat lower level. If the concentration of blood sugar one hour after the ingestion of the glucose reaches a higher level than 15, hyperglycemia exists. This hyperglycemia may be accompanied by glycosuria. In patients with thromboangiitis obliterans the concentration rose to 1.38 and 0.248 per cent. and remained much above the normal at the end of one and even two hours. Further studies are being carried on along these lines. The author suggests that there is room for a vast amount of new work in this particular disease. [E. H. R.]

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MEDICINE.

THE ESSENTIAL CHARACTERISTICS OF SUCCESSFUL AND UNSUCCESSFUL AVIATORS.

RIPPON AND MANUEL (*The Lancet*, Sept. 28, 1918) discuss the characteristics which, in their experience, have been noted among successful and unsuccessful aviators, with particular reference to temperament.

"The successful aviator has always the attributes of a sportsman. As a schoolboy he takes part in all forms of athletics and after leaving school still keeps it up and probably goes in for other kinds of sport—hunting, shooting, fishing, rowing, golfing, etc. He joins the Air Force because he is keen on flying, as it appeals to his sporting proclivities.

"He possesses resolution, initiative, presence of mind, sense of humor, judgment. He is alert, cheerful, optimistic, happy-go-lucky, and frequently lacking in imagination. The majority of successful pilots are under 25 years of age. They are possessed to a very high degree of animal spirit and excessive vitality. Their favorite amusements are theatres, music (chiefly ragtime), cards, and dancing, and it appears necessary for the well-being of the average pilot that he should indulge in a really riotous evening at least once or twice a month. Alcohol is taken freely by the older men, but the young, fit pilot, serving at home, hardly ever touches it. It is not necessary to legislate on the subject of alcohol for pilots; they are well aware of the danger of taking too much before flying.

"The majority of successful pilots are unmarried. Observation has shown that marriage is a definite handicap, owing to the increased sense of responsibility. The unmarried man in most cases dismisses the thought of responsibility, or takes the risk in the same way as a horse-rider puts his mount at a fence in a strange country. The married man has the knowledge of what death may mean to his wife and family.

"The writer has found that the best type of pilot was seldom drawn from a sedentary occupation, that those who had lived a sheltered life were not so good as those who had roughed it. One of the most important characteristics we noticed in successful aviators is 'hands.' This characteristic is difficult to define, but can be described as the ability of a good horse-rider, for instance, to sense the mentality of a horse by the feel of the reins, and also to convey his desires accurately to his mount. We have never known of a man who has consistently been in the first flight in the hunting field making anything but a good pilot. In the same way, the pilot with good hands senses unconsciously the various movements of the aeroplane, and rectifies any unusual or abnormal evolutions almost before they occur. He is invariably a graceful flyer, never unconsciously throwing an undue strain on the machine, just as a good riding man will never make a horse's mouth bleed.

"The fighting scout is usually the enthusiastic youngster, keen on flying, full of what one might call

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the 'joy of life,' possessing an average intelligence, but knowing little or nothing of the details of his machine. He has little or no imagination, no sense of responsibility, a keen sense of humor, able to think and act quickly, and endowed to a high degree with the aforementioned quality, 'hands.' He very seldom takes his work seriously, but looks upon 'Hun-strafing' as a great game.

"The question whether this type should possess a knowledge of mechanism, and of the whys and wherefores of flying is a very debatable point. The authors, however, express their definite conviction that the less the fighting scout pilot knows about his machine from a mechanical point of view the better."

The remainder of the article gives examples of successful pilots and of unsuccessful candidates.

[J. B. H.]

MYRTOL POISONING; WITH COMMENTS UPON THE TOXICITY OF EUCALYPTUS OIL AND MYRTOL IN HUMAN BEINGS AND IN ANIMALS.

BARKER AND ROWNTREE (*Bull. of The Johns Hopkins Hosp.*, October, 1918) presents the details of a case of myrtol poisoning in a man with bronchiectasis. They then report on the result of animal experiments with myrtol and eucalyptus oil, and summarize their work as follows:

(1) Derivatives of plants belonging to the natural order Myrtaceae, and especially oil of eucalyptus and myrtol, may in large doses cause profound intoxication. In certain persons, there is an idiosyncrasy, the symptoms of intoxication occurring after minute or therapeutic doses.

(2) The intoxication may affect chiefly the nervous system (myrtogenic neuropathy) or chiefly the skin (myrtogenic dermatopathy); in some persons, nervous and cutaneous manifestations are simultaneously observable.

3. Recovery occurs in most instances though several fatalities following eucalyptus poisoning have been reported.

(4) The symptoms of intoxication of the nervous system observed in man can be reproduced in animals by subcutaneous and by intraperitoneal administration of myrtol. [J. B. H.]

TYPHUS FEVER.

CRAIG AND FAIRLEY (*The Lancet*, Sept. 21, 1918) give a brief account of their experience in the use of the Weil-Felix serological test for typhus fever in their work in Egypt and Palestine. Their conclusions are as follows:

1. This agglutination test is an invaluable aid in the diagnosis of typhus fever.

2. Frequently the reaction appears only in the disease, and as a rule rapidly increases in titre.

3. A rapid agglutination in a dilution of $^1/_{10}$ on Garrow's agglutinometer, while not absolutely reliable, is sufficiently suspicious to justify the isolation of the case. This is especially true of individuals uninoculated with T.A.B. or cholera. The serum of 50 uninoculated natives failed to give a reaction even in a dilution of $^1/_{10}$. If the test be repeated at intervals of two days confirmatory evidence will, in the great majority of cases, be obtained.

4. This test is particularly valuable in the case of natives in whom it may be difficult to distinguish clinically between severe relapsing fever and typhus.

[J. B. H.]

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MEDICINE.

TREATMENT OF FACIAL ERYSIPELAS AT CAMP CODY, NEW MEXICO.

ABATER, A. A., and WOODYATT, R. F. (*Jour. A. M. A.*, Sept. 14, 1918) present an interesting article on the treatment of this disease. The method is by the use of a collodion dressing painted on to the healthy skin surrounding the affected area, the painting to form a completely circumscribing band about 1 to 1½ inches away from the disease. This evidently prevents spread of the infection by constricting the superficial lymphatics through which the infection travels. Their results are striking. In cases treated by collodion the average hospital stay was 15 days; in other cases, 30.4 days. In the former the febrile period was 3.5 days; 8.1 days in the latter. Incidence of complications in collodion cases, 5.0, and 15.3 in all other cases. The method evidently is of value. [E. H. R.]

THE OCULAR LESIONS PRODUCED BY DICHLORETHYLSULPHIDE ("MUSTARD GAS.")

WARTHIN ET AL. (*Jour. Lab. and Clin. Med.*, October, 1918) publish a most interesting and valuable article on this subject, profusely and excellently illustrated by photographs of experimental and clinical cases. Accurate description of symptoms, pathologic signs histopathologic findings are reported in detail. All stages of conjunctivitis are set up by exposure to this gas, from slight irritation to desquamation and extensive ulceration. The authors found that the solution of dichloramine-T. in chlorcosane prevented infections and also was a good prophylactic against irritation by mustard gas. The use of any method of treatment which brings pressure on the lids or eyeballs, such as tight bandaging or heavy compresses, is absolutely contraindicated. The use of boric acid solution as an irrigation, the protection from light by darkened room or smoked glasses, and the avoidance of cocaine or any of the silver preparations is recommended, and also dichloramine-T. in strength of 0.5 to 1 per cent. solution. This article is of distinct interest. [E. H. R.]

THE TREATMENT OF DICHLORETHYLSULPHIDE ("MUSTARD GAS") INJURIES.

WARTHIN ET AL. (*Jour. Lab. and Clin. Med.*, October, 1918) in a second excellent article, beautifully illustrated by very clear photographs, gives a very vivid picture of the cutaneous injuries due to varying degrees of exposure to this gas. Treatment for mild cases is with 0.5 per cent. Dakin's solution, or, if this is too irritating, which it sometimes is, the use of Dichloramine-T in chlorcosane or in sodium stearate is recommended. The authors advise against paraffin or oily sprays such as are used in thermal injuries. In

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the more severe injuries, Dakin's 1:10,000 potassium permanganate solution is a very excellent remedy. This article is of considerable interest and value.
[E. H. R.]

STUDIES IN FRACTIONAL ESTIMATION OF STOMACH CONTENTS.

CROHN, B. (*Am. Jour. Med. Sci.*, November, 1918) finds from his studies that the customary method of administering hydrochloric acid as a single dose is, in most instances, insufficient to relieve the abnormal condition. Small simple doses (5 to 20 minims dilute HCl N.SP) fail completely. Larger doses (25 to 40 minims) give better results, though the effects are but temporary, lasting usually for the first half hour only after administration. The method of administering small doses at frequent intervals, that is, every half, or better, every quarter hour, however, is a more efficient one for accomplishing the desired effect. The custom of giving acid before a meal has no advantages. The best results are seen when it is taken during the early part of the digestion cycle. The effect of acid so administered is purely a local chemical one. A resultant physiological stimulation of the mucosa was never demonstrable from the experiments.
[E. H. R.]

SURGERY.

THE NATURE OF SURGICAL SHOCK AND HENDERSON'S THEORY OF ACAPNIA.

ALMERDA, A. ODE and M. ODE (*Jour. A. M. A.*, Nov. 23, 1918) find, from experimental work, that excessive and prolonged artificial respiration produces coma and death only when it is made with air having a sufficiently low temperature and humidity. If the temperature and humidity of the air are sufficiently raised, the respiration may be prolonged indefinitely without obtaining this result. Since these latter conditions produce strong acapnia, it is clear that this state has no relation to coma. It was the coma resulting from the internal cooling of the animal that Henderson confused with a state of shock. The continuous failure of Henderson to obtain what he thought was shock, when respiration was made with air already once breathed, proves that under such conditions it is impossible to obtain the internal cooling of the animal because expired air is saturated with moisture and has a relatively high temperature.
[E. H. R.]

MULTIPLE INFECTION: A STUDY OF THE RELATION OF ONE INFECTION TO ANOTHER.

DUKE, W. W. (*Jour. A. M. A.*, Nov. 23, 1918) finds many definite clinical proofs that when a person has several infections, each may increase the severity of the others, whether due to the same or different infecting organisms. This refers to the ordinary gross infections, syphilis, tuberculosis, etc. Acute exacerbation of one chronic infection may stir up another apparently latent infection into activity. The removal of one infection may, under favorable conditions, be produced by spontaneous healing or improvement in others. If minor infections are properly taken care of, those that appear serious may yield more easily to treatment. Chronic sepsis exerts a serious influence on the course of tabes dorsalis and its removal is frequently followed by amelioration in the symptoms of tabes.
[E. H. R.]

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INTESTINAL OBSTRUCTION. CONTINUED STUDIES.

ESTLING, H. B., AND DRAPER, J. W. (*Jour. A. M. A.*, Nov. 16, 1918) find that duodenal transplantation definitely shows that the duodenum and its appendages, singly or collectively, produce the lethal agent which causes death in intestinal obstruction. A proteose may be isolated under certain conditions. This will cause death if injected. Further definite corroboration, however, is necessary to prove that this test tube product is identical with the vital lethal product of acute obstruction. A true lethal line or point of maximum obstruction toxicity exists in the second portion of the duodenum, oral and aboral, to which obstruction death occurs in a definite mathematical ratio. The lethal agent is probably of biochemical origin similar to parathyroid or other endocrine secretions, interference with which causes death.

[E. H. R.]

DAKIN'S SOLUTION AND DAKIN'S OIL IN THE NORMAL PERITONEAL CAVITY OF THE DOG.

GREY (*Bul. of The Johns Hopkins Hosp.*, October, 1918) reports his observations on the use of Dakin's solution and Dakin's oil, in order to emphasize the fact that the indiscriminate use of the chlorin antiseptics is not entirely devoid of danger. He concludes as follows:

Both the neutral solution of chlorinated soda (Dakin's solution) and dichloramine-T in chlorinated paraffin (Dakin's oil), when injected into the normal peritoneal cavity of a dog, lead to an inflammatory reaction, the degree of which is directly proportional to the amount of chlorin antiseptic used. With a sufficient quantity (less of the oil suffices) death ensues.

When either of the chlorin antiseptics is injected into the gall-bladder of a dog no normal symptoms appear. Following the injection of the oil, however, the gall-bladder becomes thickened and shrunken, though the remainder of the biliary tract shows no discernible changes.

A small amount of Dakin's oil, when injected into the normal pleural cavity of an unanesthetized dog, may lead to a rapid (reflex?) death.

Since Dakin's oil, particularly, has been used without recognizable ill effects in certain infections of the abdominal cavity, the results from the experiments outlined above suggest that the wall of an abscess cavity or sinus must play an important part in protecting the peritoneum in general from the effects of the free chlorin. They also suggest that the maintenance of an adequate drainage tract is an indispensable part of the technique for using antiseptics of this nature within the abdomen. Until more evidence is at hand, then, both of the chlorin antiseptics should be used in intra-abdominal infections with caution and certainly only in carefully selected cases.

[J. B. H.]

PATHOLOGY

MULTIPLE NEUROFIBROMATOSIS (VON RECKLINGHAUSEN'S DISEASE) AND ITS INHERITANCE.

PRESSER, S. G., and DAVENPORT, C. B. (*Am. Jour. Med. Sci.*, October, 1918) write a very thorough article on this interesting subject, describing the clinical symptoms, metabolic changes, distribution, and discuss the law of recurrence in families, also the macroscopic pathology. They review 243 cases from the literature and analyze 30 cases of the familial type, establishing, to their own satisfaction, the hereditary tendency. The article brings the subject well up to date.

[E. H. R.]

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MEDICINE.

COMMUNICABLE DISEASES IN THE NATIONAL GUARD AND NATIONAL ARMY OF THE UNITED STATES DURING THE SIX MONTHS FROM SEPTEMBER 29, 1917, TO MARCH 29, 1918.

VAUGHAN, V. C., AND BEMER, G. T. (*Jour. of Lab. and Clin. Med.*, August, 1918). This article, occupying 81 pages or the entire space of this month's edition of this journal, is an extremely interesting and valuable one. It is richly illustrated by tables and charts showing morbidity and mortality in a very graphic way. Cases of epidemic are frankly discussed, such as those due to inadequate clothing, hospital or medical care, etc. Each disease is analyzed separately and also in groups. This article is very comprehensive and gives an excellent survey of diseased conditions in army camps. [E. H. R.]

TREATMENT OF LEPROSY WITH SODIUM GYNECARDATE.

MUIR (*Ind. Med. Gazette*, June, 1918) reports results in the treatment of thirty lepers with sodium gynecardate "A". A 3% solution of the gynecardate in distilled water with 1% pure carbolic acid and 1% sodium citrate was prepared, and of this solution from 0.5 c.c. to 5.0 c.c. were given three times a week intravenously. The injections were stopped or the dose reduced if untoward symptoms developed—febrile or inflammatory reaction, diarrhea, headache, dizziness. Improvement was recorded by outlining the anesthetic areas with a caustic or with the prick of a pin at weekly intervals. The circumscribed areas yielded much more rapidly to treatment than the more diffuse patches. Improvement in the tubercular nodules was indicated by softening of the lumps, to be detected only by the sense of touch. With one exception, the improvement in this respect was marked. The most rapid progress was recorded in the youngest patients and in those who had been ill the shortest time. One patient, however, who had been ill eighteen years, lost all traces of anesthesia and nodular swelling. Leper asylums, the writer concludes, should not be places where lepers are kept till they die but hospitals from which year by year patients would be turned out cured. [L. D. C.]

RAT DESTRUCTION AS A MEANS FOR THE PREVENTION OF PLAGUE.

DENNYS (*Ind. Med. Gazette*, May, 1918) gives elaborate statistics to prove his contention that the destruction of rats is useless as a measure for the prevention of plague. It will not save a town if other conditions are favorable for an epidemic. In several of the outbreaks investigated he finds evidence that the attempt to reduce the normal rat population tended to increase the chance of a town's becoming infected. Towns previously plague-infected, where no rat destruction was attempted, were apparently not more prone to recrudescence than those in which vigorous and systematic rat campaigns were conducted. The writer believes that money spent on rat destruction is money wasted. What is needed is

(Continued on page vi.)

(Continued from page iv.)

a method of controling or checking the multiplication of the rat flea or of reducing the number each rat is able to harbor. [L. D. C.]

QUININE PROPHYLAXIS IN MALARIA.

ROGERS (*Ind. Med. Gazette*, July, 1918) writes an interesting paper on the prophylaxis of malaria in India. In places where the great majority of the inhabitants are already infected, he says, quinine prophylaxis is of little use except in immigrants, among whom it is of the utmost importance. For the general population, full curative treatment once in three months is necessary to materially reduce the disease. For successful prophylaxis the dose should be not less than 10 grains—enough to kill all the invading parasites. The intervals between doses should not exceed two days less than the mean incubation period of the most rapidly developing form of malaria present, which will almost invariably be the malignant tertian variety with a mean incubation period of six days and a minimum of two days. This interval should therefore, be not less than four days and, if an epidemic is present this should be reduced to two days. The prophylactic doses should be given on two consecutive days, in order to act on the stage most amenable to quinine of each brood of a double infection. [L. D. C.]

SURGERY.

THE TRAUMATIC ABDOMEN.
ACUTE PANCREATITIS.

DEAVER, J. B. (*Annals of Surg.*, September, 1918). These two articles by this author are concise and readable and full of the meat of the author's wide experience. They are worth reading. [E. H. R.]

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